

6-1-1993

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Recommended Citation

Hughes, P.A., K.A. Lesniewicz, and R.B. Rourke. 1993. Water tables, soil temperatures and morphological characteristics in selected Maine Soils. Maine Agricultural Experiment Station Technical Bulletin 150.

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ACKNOWLEDGMENTS

The authors wish to recognize others who have contributed to the success of this study.

The selection, description, and monitoring of soil sites were accomplished through the extensive efforts of Lawrence R. Flewelling, Robert H. Lisante, Jonathan W. Miller, Dennis P. Durgin, Norman R. Kalloch, David E. Wilkinson, David J. Popp, Gary T. Hedstrom, Wayne D. Hoar, Manley H. Bailey, Glendon B. Jordan, and Donald O. Clark, all present or former soil scientists of the Soil Conservation Service, U.S. Department of Agriculture (USDA).

Mary Fernandez assisted in preparing the manuscript and in conversion of the text to an acceptable word-processing format.

Richard T. Hunter provided valuable assistance in the development of the graphic presentation.

Constructive reviews of the text and data by Russell D. Briggs, Ivan J. Fernandez, Doris W. Laber, and Kenneth J. LaFlamme are greatly appreciated.

The study was supported by the Soil Conservation Service, USDA, and the Maine Agricultural Experiment Station, Orono, Maine.

Contents

SUMMARY	1
INTRODUCTION	1
PROCEDURE	2
MATERIALS	3
RESULTS AND DISCUSSION	7
Well to Excessively Drained Soils	7
Moderately Well Drained Soils	9
Somewhat Poorly Drained Soils	11
Poorly Drained Soils	12
CONCLUSIONS	14
LITERATURE CITED	15
APPENDIX	17

Tables

1. Parent material, drainage, and taxonomic classification of the soil map units in this study	4
2. Site location and position of soil map units in this study	5
3. Local landform and current management of soil map units in this study	6

SUMMARY

Water table and soil temperature data were collected from 34 soil map units representing 17 different soil series in Maine. Soil morphology was also described at each site. Water table height, soil temperature, and morphological data are presented for each map unit studied. Relationships between water table heights and duration, and the morphological characteristics of the soils are discussed.

INTRODUCTION

Water tables in soils affect agricultural uses, engineering interpretations, and efforts to maintain environmental quality. High water tables reduce the ability of soils to support loads, delay field operations, restrict rooting depth of plants, and retard warming of soils in the spring. They cause water in excavations and basements, heaving of roads as a result of frost action, and can cause pollutants from septic tanks and agricultural, industrial, or municipal operations to enter aquifers and bodies of water. Knowledge of the seasonal high water tables is important in the planning and design aspects of construction and soil management.

Studies in Indiana (Franzmeier et al. 1973), Ohio (Zobeck and Ritchie 1984), Massachusetts (Pickering and Veneman 1984), New Hampshire (Coombs et al. 1985), New York (Fritton and Olson 1972), and North Carolina (Daniels et al. 1987) have shown that various relationships exist between water tables and the morphological properties of soils.

In Maine, soils are separated into seven drainage classes: excessive, somewhat excessive, well, moderately well, somewhat poorly, poorly, and very poorly drained. These drainage classes are defined in terms of the depth to, and duration of, a seasonal high water table. Interpretations for use are based on this criteria. The Soil Survey Manual (1951, 1981) describes these drainage classes in relation to crop production. The Maine Association of Professional Soil Scientists (1990) has developed a key for identifying the seven classes. In the field, soil scientists determine the presence and duration of a high water table by noting the depth to drainage mottles, presence of reduced horizons, and accumulations of organic materials.

Soil temperature classes of Maine soils are either cryic, frigid, or mesic. Cryic and frigid average soil temperatures are higher than 0° C but lower than 8° C. Cryic soil temperatures are colder than

frigid in the months of June, July, and August. Mesic soil temperatures average between 8° C and 15° C. All soil temperature regimes in Maine have at least a 5° C difference between average winter and summer temperatures. Soil temperatures are measured using consistent time intervals at a 50-cm depth to make these determinations. The data presented in the appendix graphs represent the average soil temperature during the period shown on the graph.

This study was initiated in 1975 to determine how well the observed seasonal high water tables relate to morphological features. Four soil survey parties carried out the field study from 1975 to 1985, but the period of data collection for any one site varied from 1 to 5 years.

PROCEDURE

Sites were selected, described, and monitored by soil scientists from the USDA Soil Conservation Service during the time that a soil survey was being conducted in Hancock, Knox, Lincoln, Oxford, and York counties.

Piezometers (well pipes) were constructed according to methods outlined in the Handbook of Soil Survey Investigations Field Procedures (Soil Survey Staff 1971) to measure depth to water table. Electrical metallic tubing of 3.2-cm diameter was used for the pipes in Knox, Lincoln, Oxford, and York counties. Galvanized pipe 2.0 cm in diameter was used in Hancock County. Stock pipe was cut into lengths of 1 and 2 meters, depending on the soil to be studied. Points were formed on one end for driving the piezometers into the soil. Randomly spaced holes 3 mm in diameter were drilled in the sides of each pipe. Pilot holes in the soil for the larger piezometers were made with a 2.54-cm-diameter screw auger. After being driven into the soil, the upper ends of the piezometers were covered with a metal can or plastic bag. All sites were monitored monthly; some sites were monitored more frequently during wet periods.

Soil temperature also was monitored at most sites. Remote sensing devices, utilizing thermistors attached to electrical cables, were standardized using the freezing point of distilled water. These thermistors were installed in the soil 50 cm below the ground surface. A steel rod 1.2 cm in diameter was used to make the pilot hole in the soil into which the thermistor was placed, and the soil was filled in after installation. Soil temperature readings were taken by plugging the cable ends of the thermistor into a portable multimeter when the soil scientists visited the site. Standardized metal soil thermometers were used at some sites and at sites where

the thermistors failed because of animal or human damage. Using a metal soil thermometer required digging a nearby bore hole to a depth of at least 50 cm at each inspection.

MATERIALS

Thirty-four different map units representing 17 different soil series were studied in Maine. The soil map units studied are listed in Table 1 along with their parent material, drainage class, and taxonomic classification (Soil Survey Staff 1975, 1990). Site location of the soil map units is presented in Table 2, and local landform and current management are shown in Table 3.

Adams, Becket, Fryeburg, Marlow, Masardis, and Ondawa soils are well to excessively drained depending on the series. Adams, Fryeburg, Masardis, and Ondawa soils do not have mottles within 100 cm of the mineral soil surface. Becket and Marlow soils do not have mottles within the solum although mottles may be present in the dense basal till of Becket within 100 cm of the mineral soil surface.

Croghan, Lovewell, Nicholville, Podunk, Sheepscot, and Skerry soils are moderately well drained. Lovewell and Podunk soils have mottles with chroma of two or less between 40 and 60 cm below the surface. Croghan, Nicholville, and Skerry soils have mottles in the lower part of the spodic horizon below 40 cm from the mineral soil surface. Sheepscot soils have mottles between 40 and 100 cm from the mineral soil surface in the lower part of the subsoil and/or in the substratum. The mottles are indicative of the presence of a water table when the soil temperature is warm enough to stimulate microbial activity that results in their formation.

Cornish, Lamoine, and Westbury soils are somewhat poorly drained. Cornish soils have mottles with a chroma of two or less between 15 and 40 cm below the mineral soil surface. Lamoine soils have mottles with chroma of two or less between 15 and 40 cm below the mineral soil surface and a reduced horizon or reduced colors on ped faces within 50 cm of the mineral soil surface. Westbury soils have mottles in the albic or upper part of the spodic horizon.

Naumburg soils are somewhat poorly or poorly drained and have mottles in the albic horizon or in the upper part of the spodic horizon between the surface and a depth of 40 cm. Brayton soils are somewhat poorly or poorly drained and have mottles with a chroma of two or less between the mineral soil surface and a depth of 40 cm and have a reduced horizon or reduced colors on ped faces within 50 cm of the mineral soil surface. By definition, poorly drained soils are

saturated at or near the surface for an extended period of time when the soil temperature is above biologic zero (5° C).

Table 1. Parent material, drainage, and taxonomic classification of the soil map units in this study.

Soil Map Unit	Drainage ¹	Family Name
Outwash		
Sandy		
Adams	E & SWE	Sandy, mixed, frigid Typic Haplorthods
Croghan	MW	Sandy, mixed, frigid Aquic Haplorthods
Naumburg	SWP & P	Sandy, mixed, frigid Aeris Haplaquods
Gravelly		
Masardis	SWE	Sandy-skeletal, mixed, frigid Typic Haplorthods
Sheepscot	MW	Sandy-skeletal, mixed, frigid Typic Haplorthods
Basal Till		
Becket	W	Coarse-loamy, mixed, frigid Typic Haplorthods
Marlow	W	Coarse-loamy, mixed, frigid Typic Haplorthods
Skerry	MW	Coarse-loamy, mixed, frigid Aquic Haplorthods
Westbury	SWP	Coarse-loamy, mixed, frigid Typic Fragaquods
Brayton	SWP & P	Coarse-loamy, mixed, nonacid, frigid Aeris Haplaquepts
Alluvium		
Silty		
Fryeburg	W	Coarse-silty, mixed, frigid Fluventic Dystrochrepts
Lovewell	MW	Coarse-silty, mixed, frigid Fluvaquentic Dystrochrepts
Cornish	SWP	Coarse-silty, mixed, frigid Fluvaquentic Dystrochrepts
Loamy		
Ondawa	W	Coarse-loamy, mixed, frigid Fluventic Dystrochrepts
Podunk	MW	Coarse-loamy, mixed, frigid Fluvaquentic Dystrochrepts
Sediments		
Silty		
Nicholville	MW	Coarse-silty, mixed, frigid, Aquic Haplorthods
Clayey		
Lamoine	SWP	Fine, illitic, nonacid, frigid Aeris Haplaquepts

¹ E—excessive, SWE—somewhat excessive, W—well, MW—moderately well, SWP—somewhat poorly, P—poorly

Table 2. Site location and position of soil map units in this study.

Soil Map Unit & Location	Latitude	Longitude	Slope/Aspect
Adams, Airport, Fryeburg	43°59'04"	70°56'47"	2%/East
Adams, Dump Rd., Oxford	44°09'12"	70°29'53"	1 to 2%/West
Becket, Darnit Rd., Buckfield	44°19'01"	70°26'43"	12%/Northeast
Becket, Suncook School Rd., Lovell	44°07'28"	70°54'39"	4%/Southwest
Brayton, Grant Rd., Acton	43°32'07"	70°54'12"	0 to 2%/North
Brayton, Gammon Rd., Buckfield	44°18'11"	70°19'56"	3%/East
Brayton, Hanson Ridge, Sanford	43°27'07"	70°48'40"	0%
Brayton, Orchard Rd., Buckfield	44°18'19"	70°19'55"	0%
Brayton, Paris Hill, Paris	44°17'16"	70°29'37"	0%
Cornish, Route 302, Fryeburg	44°01'03"	70°58'56"	1%/West
Cornish, McNeil Rd., Fryeburg	44°07'15"	70°56'35"	1%/North
Croghan, Airport, Fryeburg	43°58'45"	70°56'90"	1%/East
Croghan, Route 26, Oxford	44°09'29"	70°29'38"	2%/West
Croghan, Sargent Dr., Mt. Desert	44°20'26"	68°18'04"	10%/North
Fryeburg, Route 302, Fryeburg	44°01'18"	70°59'05"	1%/West
Lamoine, Carll Rd., Buxton	43°39'30"	70°29'50"	6%/East
Lovewell, Route 302, Fryeburg	44°01'05"	70°58'57"	1%/West
Marlow, Route 177, Blue Hill	44°26'38"	68°38'15"	9%/Northwest
Masardis, Mariners Pit, Washington	44°13'33"	69°24'04"	3%/South
Naumburg, Bremen School, Bremen	44°02'35"	69°25'37"	2%/West
Naumburg, Patterson Mill Rd, Warren	44°07'30"	69°12'57"	2%/North
Nicholville, Patten Pond, Surry	44°32'01"	68°32'11"	5%/North
Nicholville, Lincoln Rd., Dresden	44°05'39"	69°46'35"	3%/Northwest
Ondawa, Route 113, Fryeburg	44°05'53"	70°57'56"	0%
Podunk, Cannery Rd., Fryeburg	44°04'42"	70°57'54"	0%
Sheepscot, Bog Rd., Alna	44°07'08"	69°38'48"	3%/Southeast
Sheepscot, Patterson Mill Rd., Warren	44°07'15"	69°13'17"	3%/Northwest
Sheepscot, Mill Rd., Lamoine	44°28'48"	68°19'33"	6%/East
Sheepscot, Sharkeyville, St. George	44°01'34"	69°09'39"	2%/South
Skerry, Worthely Pond, Peru	44°27'09"	70°24'58"	9%/East
Skerry, Monotomy Rd., Fryeburg	44°02'19"	70°55'47"	2%/North
Skerry, Sewing Machine Rd., Buckfield	44°18'53"	70°25'35"	5%/South
Skerry, Dixon Rd., Lebanon	43°24'45"	70°58'12"	7%/Northeast
Westbury, Lord Rd., Lebanon	43°22'37"	70°52'31"	0%

Table 3. Local landform and current management of soil map units in this study.

Soil Map Unit & Location	Local Landform	Current Vegetation
Adams, Airport, Fryeburg	outwash plain	woodland/mixed
Adams, Dump Rd., Oxford	outwash plain	woodland/mixed
Becket, Darnit Rd., Buckfield	drumlin ridge	field/grasses
Becket, Suncook School Rd., Lovell	hillside	woodland/mixed
Brayton, Grant Rd., Acton	valley side	woodland/hardwoods
Brayton, Gammon Rd., Buckfield	valley side	woodland/mixed
Brayton, Hanson Ridge, Sanford	ridge	woodland/hardwoods
Brayton, Orchard Rd., Buckfield	valley side	woodland/hardwoods
Brayton, Paris Hill, Paris	ridge	woodland/hardwoods
Cornish, Route 302, Fryeburg	flood plain	hayland/grass
Cornish, McNeil Rd., Fryeburg	flood plain	cultivated/potatoes
Croghan, Airport, Fryeburg	outwash plain	woodland/mixed
Croghan, Route 26, Oxford	outwash plain	woodland/softwoods
Croghan, Sargent Dr., Mt. Desert	outwash terrace	old field/mixed grass and softwoods
Fryeburg, Route 302, Fryeburg	flood plain	cultivated/potatoes and corn
Lamoine, Carll Rd., Buxton	marine terrace	pasture/grass
Lovewell, Route 302, Fryeburg	flood plain	hayland/grass
Marlow, Route 177, Blue Hill	hillside	old pasture/grasses and saplings
Masardis, Mariners Pit, Washington	outwash plain	woodland/softwoods
Naumburg, Bremen School, Bremen	outwash plain	woodland/mixed
Naumburg, Patterson Mill Rd., Warren	outwash plain	woodland/mixed
Nicholville, Patten Pond, Surry	lake terrace	woodland/mixed
Nicholville, Lincoln Rd., Dresden	fluvial terrace	woodland/softwoods
Ondawa, Route 113, Fryeburg	flood plain	cultivated/beans and corn
Podunk, Cannery Rd., Fryeburg	flood plain	cultivated/beans and corn
Sheepscot, Bog Rd., Alna	outwash terrace	woodland/mixed
Sheepscot, Patterson Mill Rd., Warren	outwash terrace	woodland/mixed
Sheepscot, Mill Rd., Lamoine	outwash plain	old field/shrubs and ferns
Sheepscot, Sharkeyville, St. George	outwash plain	old field/softwoods and grasses
Skerry, Worthely Pond, Peru	valley side	woodland/mixed
Skerry, Monotomy Rd., Fryeburg	valley side	woodland/hardwoods
Skerry, Sewing Machine Rd., Buckfield	hillside	woodland/hardwoods
Skerry, Dixon Rd., Lebanon	hillside	woodland/mixed
Westbury, Lord Rd., Lebanon	valley side	woodland/mixed

RESULTS AND DISCUSSION

The soil profile descriptions, water table, and soil temperature data collected are presented in alphabetic sequence in the Appendix. The soil profile descriptions show the morphologic features of the soils studied, and these features usually change little over relatively long time spans. Therefore, soil profile discussions are presented in the present tense because they still exist. The official series description of the drainage characteristics of each soil series is compared to features determined at each soil site in the following discussions. Graphs in the Appendix show the location of the piezometers and water tables and the soil temperatures for each site. The authors encourage readers to refer to the graphs as the results are discussed.

Well to Excessively Drained Soils

The Adams soils are somewhat excessively and excessively drained and formed in sandy outwash. Masardis soils are somewhat excessively drained and formed in gravelly outwash. Both Adams and Masardis are described as having high chroma matrix colors in the solum and substratum with no mottles.

The Adams soil in Fryeburg had no observable water table during three years of study. The Adams soil in Oxford had a water table between 75 and 100 cm below the soil surface from mid-November to late December of 1980 and at 123-cm depth for one observation in the fall of 1981. The water table data for the first half of 1981 are not presented because the holes in the piezometer corroded in early 1981 to the extent that water inside the pipe could not drain out. This was discovered in June of 1981 when a nearby observation pit was dug to correlate the actual water table in the soil with water levels in the piezometer. The pipe was then unclogged and reset. Three matrix colors are described in the lower part of the substratum in the soil at this site which may indicate fluctuating ground water in the substratum. This site had no observable water table during 1982.

The Masardis soil had a water table that appeared suddenly and then dropped steadily during May and June of 1979. The water table was observed only once in 1980 at 114 cm below the surface during May.

The Fryeburg and Ondawa soils are well drained and formed in alluvium. Both the Fryeburg and Ondawa soils in this study are described as having no mottles and high chroma matrix colors in the solum and substratum. A water table was observed in the Fryeburg

soil below a 135-cm depth during late October 1979 and extending into January 1980. A water table was observed for a single observation in April 1980 and again in June 1982. No water table was observed in 1981. No water table was observed in the Ondawa soil during the three years it was studied.

Water tables observed in the Adams, Fryeburg, and Masardis soils were of short duration and usually were present in the substratum. No properties are described in these soils that would have indicated the presence of any short duration water tables. According to Soil Taxonomy (Soil Survey Staff 1975, 1990) for mottle formation to occur the soil must be saturated for a significant period when the soil temperature is above biologic zero. The water tables observed in these soils were present when the soil temperature was above biologic zero. It appears that either the observed water tables were not of long enough duration or frequent enough occurrence for observable mottles to form, or that the water was highly oxygenated and did not result in reducing conditions.

Becket and Marlow are well drained soils formed in dense basal till. Since the substratum in these soils is dense basal till, it is described as a restrictive layer for both water movement and root penetration. Maine Agricultural Experiment Station Technical Bulletins 34, 46, (Rourke and Beek 1969, 1971) 94, (Rourke and Schmidt 1979), and 108 (Rourke and Bull 1982) describe the physical and chemical properties of soils formed in basal till and show the bulk density of the basal till to be greater than 1.4 g cm^{-3} . The Becket soil in Buckfield is described with a high chroma matrix throughout with mottles only in the dense basal till. The depth to the dense basal till is 60 cm. Chemical and physical properties for this site were analyzed in the laboratory by Rourke and Bull (1982). In an effort to determine the presence of a perched water table above the basal till, two piezometers were installed at this site: one to a depth of 56 cm above the basal till and one to a depth of 112 cm that extended into the basal till. The shallow piezometer was essentially dry during the five-year period of the study; water was observed only four separate times. Water was observed in the deep piezometer only once during 1980. The fluctuating water levels observed in this piezometer during 1982 and 1983 were discontinuous and generally were below the 60-cm depth. In 1984 and 1985 the water levels were nearly steady at the 65- to 70-cm depth for the entire period. A nearby observation pit, opened to correlate the actual water tables in the soil with the water levels in the deep piezometer, showed the soil to be dry. The lower part of the piezometer (with drainage holes) had been installed in the dense basal till and became

impervious to water movement over a period of time. This resulted in misleading data. Therefore, data for 1984 and 1985 for this site are not presented.

The Becket soil in Lovell is described with high chroma matrix colors in the solum with high and low chroma mottles in the lowest part of the solum. The low chroma mottles in the BC2 are considered to be relict. The dense substratum is mottled and low chroma in matrix color. Because of the high position of the site in the landscape, the low chroma matrix color was considered to be the natural color of the parent material and not the result of reduction processes. The depth to dense basal till is 80 cm. Chemical and physical properties of the soil at this site were analyzed in the laboratory by Rourke and Bull (1982). Two piezometers were installed at this site: one at a depth of 64 cm and the other at 89-cm depth below the soil surface. No water table was observed in either piezometer during the three-year study.

The Marlow soil in Blue Hill is described with high chroma matrix colors in the solum and substratum with the exception of the E and Bhs horizons which have low chroma matrix colors that are the result of soil process other than reduction. There are no mottles. Dense basal till is at a depth of 86 cm. The piezometer was installed with the tip 4 cm into the basal till. A water table was observed in the piezometers for short periods in winter, early spring, and fall. The water levels observed were below 50 cm from the surface in the lower part of the solum.

Moderately Well Drained Soils

Croghan soils are moderately well drained soils formed in sandy outwash material with less than 15 percent rock fragments and have mottles in the lower part of the spodic horizon. All three of the Croghan soils are described with high chroma matrix colors throughout, except the E horizon, with mottles in the lower part of the spodic horizon, in the BC horizon, and in the substratum. Mottling at all locations in this study is higher than the moderately well drained criteria presently used in Maine and meets the definition of somewhat poorly drained conditions currently used. The water tables in the Croghan soils in Fryeburg and Oxford were variable from year to year and were in the lower part of the solum or in the substratum. They were highest in April and May during the spring snowmelt and runoff and dropped below the level of observation by early summer. The highest water table levels approximated the highest level of mottles described at the two locations. The water table patterns were similar for the two sites.

The Croghan soil in Mt. Desert was wetter. The water table was at or near the surface during late winter through spring and again in the fall. The water table was higher than the highest level of the mottles described at this location. The water table patterns in this soil are similar to the somewhat poorly and poorly drained soils which will be discussed later.

Lovewell and Podunk are moderately well drained soils formed in alluvium. Mottles are present within 60 cm of the soil surface and result in their classification in the fluvaquentic subgroup. The Lovewell soil in Fryeburg has mottles within 60 cm as required for the series. The water table in the Lovewell soil appeared suddenly during late winter or spring and dropped below the level of observation by early summer. The highest water table levels lasted less than a month and were below a depth of 40 cm, corresponding to the uppermost horizons described with mottles. The water table was present mostly when soil temperature was below biologic zero.

The Podunk soil in Fryeburg has mottles below 60 cm and thus is classified the same as the well drained Ondawa soil. The Podunk soil in Fryeburg was dry all three years. The "old course" of the Saco River is nearby. In the late 1800s the Saco River was rerouted, lowering the water level in the former riverbed. It is possible that the seasonally high water table in this soil has been lowered, and soil genesis since then has been insufficient to modify the previously formed morphology.

Nicholville is a moderately well drained soil formed in wind- and water-deposited silts and/or very fine sand with mottles in the lower part of the spodic horizon. Both Nicholville soil sites, Surry and Dresden, are described with high chroma matrix colors in the subsoil and substratum. However, no mottles are described within the spodic horizon as required for the series. Mottles are described in the lower part of the solum and in the substratum at the Surry site; they are described only in the substratum at the Dresden site. Soils at both sites had water tables that extended above the zone of mottling. The highest water tables occurred during late winter, spring, and late fall in Surry. The water table was in the mid-part of the solum for discontinuous periods, mostly when soil temperature at 50 cm was below biologic zero. Water levels in the piezometers declined and remained essentially below 80 cm for the summer months before rising again in the fall. The Nicholville soil in Dresden was drier. The water table was brief, appearing suddenly and disappearing nearly as fast. The water table at this site extended up into the mid-part of the solum every spring, but was observed during the fall only once in three years.

Sheepscot is a moderately well drained soil formed in gravelly outwash with mottles in the lower part of the solum and the substratum. The Sheepscot soil sites, as described in Alna and Warren, are within the range of the series. The Sheepscot soil sites in Lamoine and St. George are described with mottles in the mid-part of the solum as well as in the lower part of the solum and in the substratum. The site in Lamoine also has high chroma stains and cementation described above the zone of mottling. All locations are described with high chroma matrix colors in the solum and substratum with the exception of the Ap and E horizons which have colors that are the result of soil processes other than reduction. The high water tables in the Sheepscot soils in Alna and St. George were observed mostly during March through May with the highest peaks extending above the depth of mottles described for a one- to two-month period when the soil temperature at 50 cm was below biologic zero. Water tables also were observed for brief periods in late fall but remained below the level of mottling. The Sheepscot soils in Lamoine and Warren had fluctuating water tables of longer duration that were present sometime between late fall and May. A water table was observed at the Lamoine site during the summer months at depths generally below 70 to 80 cm.

Skerry soils are moderately well drained and have formed in dense basal till with mottles in the lower part of the spodic horizon. The Skerry soil in Peru is described with mottles in the lower part of the spodic horizon and in the substratum as typical for the series. The Skerry soil sites in Fryeburg, Buckfield, and Lebanon are described with mottles in the lower part of the solum below the spodic horizon and in the substratum. Chemical and physical properties for the Skerry soils in Fryeburg and Buckfield were analyzed in the laboratory by Rourke and Bull (1982). All four Skerry soils had fluctuating water tables during fall, winter, and spring. The water tables were highest from March through May and fluctuated during that time to depths above the level of mottles described for durations of one month or less. Water tables dropped below the bottom of the piezometers during the major part of the summer.

Somewhat Poorly Drained Soils

Cornish soils are somewhat poorly drained and have formed in alluvium with mottles between 15 and 40 cm of the mineral soil surface. Both Cornish soil sites are described with high chroma matrix colors in the subsoil and substratum. One Cornish soil site in Fryeburg has mottles described below the Ap; the other site has

mottles described within the Ap. The mottles in the latter site are too high for the series, but the soil classifies the same as the Cornish series. Both Cornish soils had fluctuating water tables. The rise and fall of the water tables was quite rapid. The highest water tables occurred from February to May. The water tables in the Cornish soil on the McNeil Road were close to the surface for a duration of less than several weeks. The highest water table in the other site remained at or below the level of mottling described and was commonly present when the soil temperature at 50 cm was below biologic zero.

Lamoine soils are somewhat poorly drained and have formed in glaciolacustrine and glaciomarine sediments. The Lamoine site in Buxton is described with mottles beneath the Ap and with low chroma horizons below 38 cm. The water table was in the mid-part of the solum above 40 cm during late fall, winter, and early spring. The highest level of the water table was at or below the highest level of mottles described.

The Westbury soils are somewhat poorly drained and have formed in dense basal till. The Westbury soil site in Lebanon has low chroma colors in the upper part of the solum and high chroma colors in the lower part of the solum and substratum. Mottles are described throughout the solum and substratum except in the A horizon. This site classifies the same as the Westbury series except the mottles are described higher than defined for somewhat poorly drained soils. The water table at this site was at or near the surface from late fall through May for the years studied. Starting in early to mid-May, the water table dropped rapidly from the solum and substratum to a depth below 90 cm. The water tables rose again in the fall. The solum was free of a water table for most of the growing season.

Poorly Drained Soils

Brayton soils are somewhat poorly and poorly drained and have formed in dense basal till with low chroma subsoil horizon colors within 50 cm of the surface and with an horizon having a matrix chroma of 3 or more within 75 cm of the surface. Drainage mottles are at or near the surface.

Brayton soil sites in Acton, Sanford, and the Gammon Road in Buckfield are described within the range of the series. Chemical and physical properties for the Brayton soil in Acton were analyzed in the laboratory by Rourke and Schmidt (1979). The Brayton soils in Acton and Sanford had similar water table patterns, at or near the soil surface during the fall, winter, and spring. The water tables dropped in late May or early June and were below 60 cm for most of the summer. They rose again in October.

The Brayton soil site on the Gammon Road in Buckfield appears to be wetter than the two Brayton soils previously mentioned. However, the periods of study for these sites are not the same. Two piezometers were set up in separate areas of the map unit to determine what differences, if any, exist within the map unit. No major differences were observed. The water table was at, near, or ponded above the surface for much of the year from late September through June. The water table dropped below the solum for only about two months during mid-summer.

The Brayton soil on the Orchard Road in Buckfield does not classify the same as the series because of the high chroma colors throughout the subsoil. It is described with a reduced uppermost mineral horizon (Eg) having high chroma mottles. The underlying subsoil and substratum have high chroma matrices with high and low chroma mottles throughout. The water table pattern was similar to those of the Brayton soil sites in Acton and Sanford. The water table was at or near the surface during the late fall, winter, and spring, dropping in mid-June to below the solum. Only one year of study was done at this site.

The Brayton soil site in Paris is described with a thick, dark-colored A horizon and a reduced solum and upper substratum. The substratum below 50 cm has a high chroma matrix color. Mottles are described throughout the subsoil and substratum. This soil did not classify the same as the series (Humaquepts vs Haplaquepts) because of the thick, dark-colored A horizon. This soil is the wettest of all the sites in this study. The water table was above the surface of the soil for three months or more each year during late winter and lasted into early summer. The water table remained in the solum for the greater part of the year. The water table pattern fits the definition of very poorly drained better than poorly drained.

Naumburg soils are somewhat poorly and poorly drained soils formed in sandy outwash deposits with mottles in the albic or upper part of the spodic horizon.

The Naumburg soil site in Bremen is described with a thick albic horizon overlying thick, mottled, dark-colored spodic horizons. The underlying subsoil horizon also is mottled and has a high chroma color. This site classifies the same as the series classification.

In Warren the Naumburg soil is described similarly except that the uppermost mineral horizon is a thick, dark-colored A. Underlying the A horizon are thick, mottled, dark-colored spodic horizons. The substratum has a mottled high chroma color. As a result, this site classifies in the Typic subgroup rather than the

Aeric subgroup. Annual water table patterns for the two soils were similar. The water table remained at or near the surface during the fall, winter, spring, and early summer months then dropped to the lower part of the solum or upper part of the substratum in mid-summer before rising again in the fall. The site in Warren that classifies in the Typic subgroup had a higher water table than the site in Bremen that classified in the Aeric subgroup.

CONCLUSIONS

The data in this study support a general relationship between observed high water tables and the morphological properties described in soils.

Well drained or drier soils not formed in basal till, described without reduced horizons and without drainage mottles, were dry or had water tables confined to the substratum for short periods of time during snowmelt or after periods of high precipitation. The basal till soils presented a more difficult situation. Some sites described with no mottles in the dense basal till had water present for some periods of time while other sites having mottles in the dense substratum, or immediately above, had no observable water table.

Moderately well drained soils, described with high chroma matrix colors and mottles within the middle and/or lower part of the solum, had fluctuating water tables that frequently extended up into the mid-part of the solum during late fall and spring. The highest water table levels were in the spring during snowmelt and runoff, and extended above the level of mottles described in the soil for durations of up to a month when the soil temperature was below biologic zero.

Somewhat poorly drained soils described with drainage mottles in the upper part of the subsoil, with or without a reduced subsoil horizon, had water table levels between those of moderately well drained and poorly drained soils. Some somewhat poorly drained soils had a water table pattern resembling those in the wettest moderately well drained soils, while others had water table patterns resembling those in the driest poorly drained soils.

Poorly drained soils described with reduced horizons in the solum and mottles throughout the solum with or without organic matter accumulations at the surface, had water tables that were near, at, and sometimes above the soil surface for long continuous periods during the fall, winter, spring, and early summer. In most years the solum was usually dry for some part of the summer.

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APPENDIX

Soil Map Unit: **Adams**
Location: **Fryeburg Airport, Fryeburg, Maine**
Drainage: **Excessively drained**

Oi—5 to 0 cm undecomposed organic matter.

Oa—0 to 2 cm; black (5YR 2/1) crushed sapric material; very friable; many very fine and fine roots and common medium roots throughout; abrupt wavy boundary.

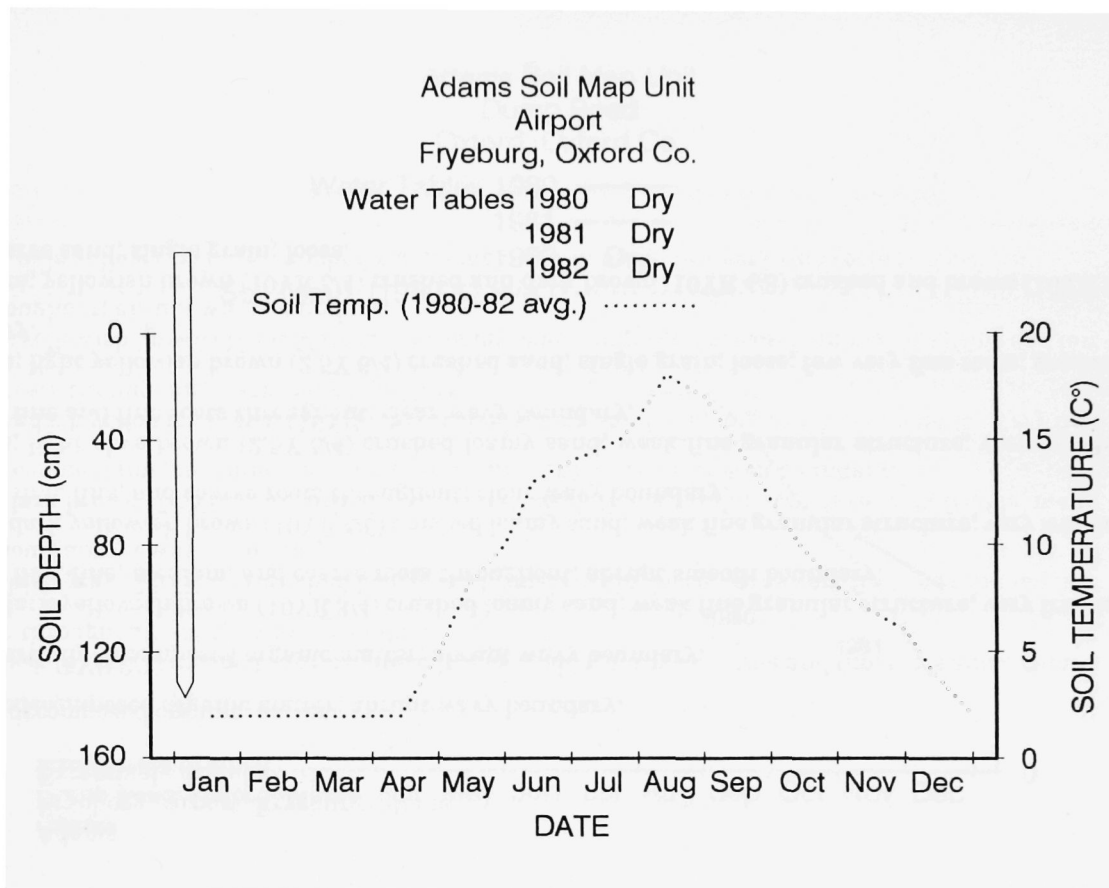
E—2 to 5 cm; pinkish gray (7.5YR 6/2) crushed loamy sand; single grain; loose; many very fine and common fine roots throughout; abrupt wavy boundary.

Bh—5 to 10 cm; dark brown (7.5YR 3/2) crushed loamy sand; weak fine granular structure; very friable; many very fine and common fine, medium and coarse roots throughout; clear broken boundary.

Bs1—10 to 23 cm; dark yellowish brown (10YR 4/6) crushed loamy sand; single grain; loose; common very fine and few fine roots throughout; clear wavy boundary.

Bs2—23 to 48 cm; yellowish brown (10YR 5/8) crushed loamy sand; single grain; loose; common very fine and few fine roots throughout; abrupt wavy boundary.

C—48 to 100 cm; pale yellow (2.5Y 7/4) crushed sand; single grain; loose; few very fine roots throughout.



Soil Map Unit: Adams
Location: Dump Road, Oxford, Maine
Drainage: Excessively drained

Oi—8 to 5 cm; undecomposed organic matter; abrupt wavy boundary.

Oe—5 to 0 cm; partially decomposed organic matter; abrupt wavy boundary.

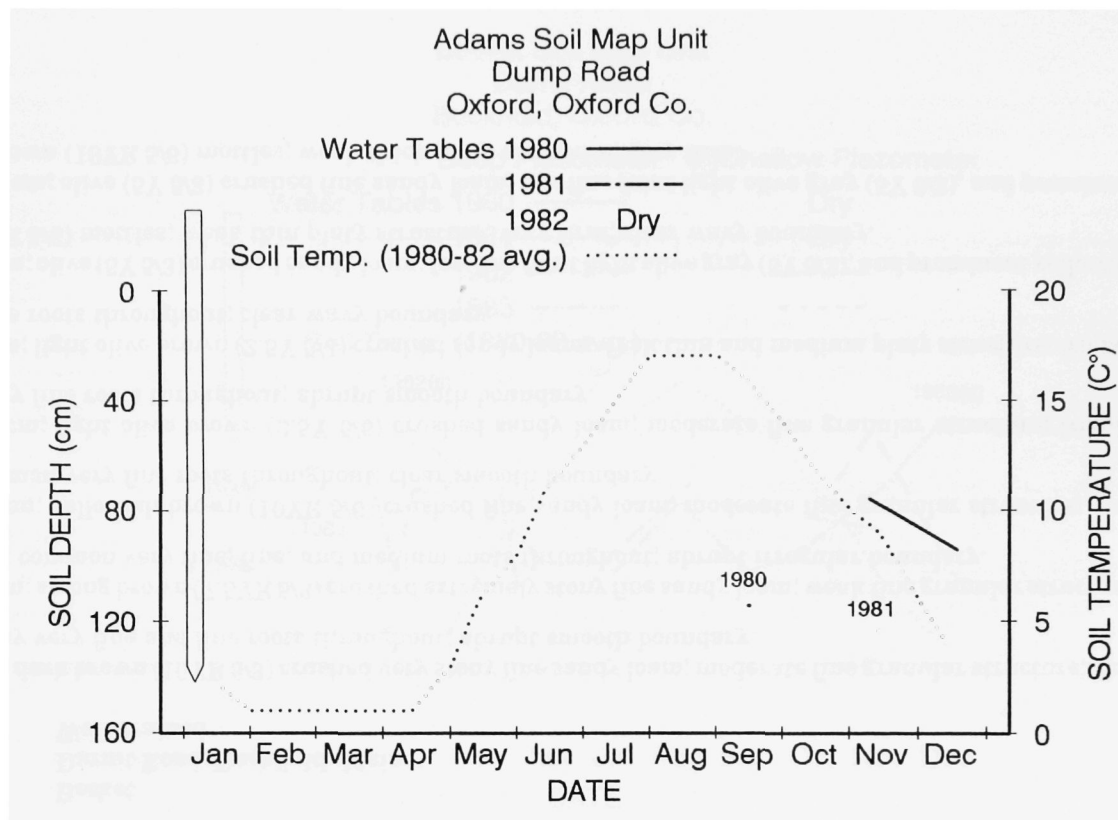
Ap—0 to 18 cm; dark yellowish brown (10YR 3/4) crushed loamy sand; weak fine granular structure; very friable; common very fine, fine, medium, and coarse roots throughout; abrupt smooth boundary.

Bs—18 to 28 cm; dark yellowish brown (10YR 4/6) crushed loamy sand; weak fine granular structure; very friable; common very fine, fine, and coarse roots throughout; clear wavy boundary.

BC—28 to 48 cm; light olive brown (2.5Y 5/4) crushed loamy sand; weak fine granular structure; very friable; common very fine and fine roots throughout; clear wavy boundary.

C1—48 to 117 cm; light yellowish brown (2.5Y 6/4) crushed sand; single grain; loose; few very fine roots; gradual wavy boundary.

C2—117 to 152 cm; yellowish brown (10YR 5/4) crushed and dark brown (10YR 4/3) crushed and brown (10YR 5/3) crushed coarse sand; single grain; loose.



Soil Map Unit: Becket
Location: Darnit Road, Buckfield, Maine
Drainage: Well drained

Ap—0 to 18 cm; dark brown (10YR 3/3) crushed very stony fine sandy loam; moderate fine granular structure; very friable; many very fine and fine roots throughout; abrupt smooth boundary.

Bs1—18 to 25 cm; strong brown (7.5YR 5/8) crushed extremely stony fine sandy loam; weak fine granular structure; very friable; common very fine, fine, and medium roots throughout; abrupt irregular boundary.

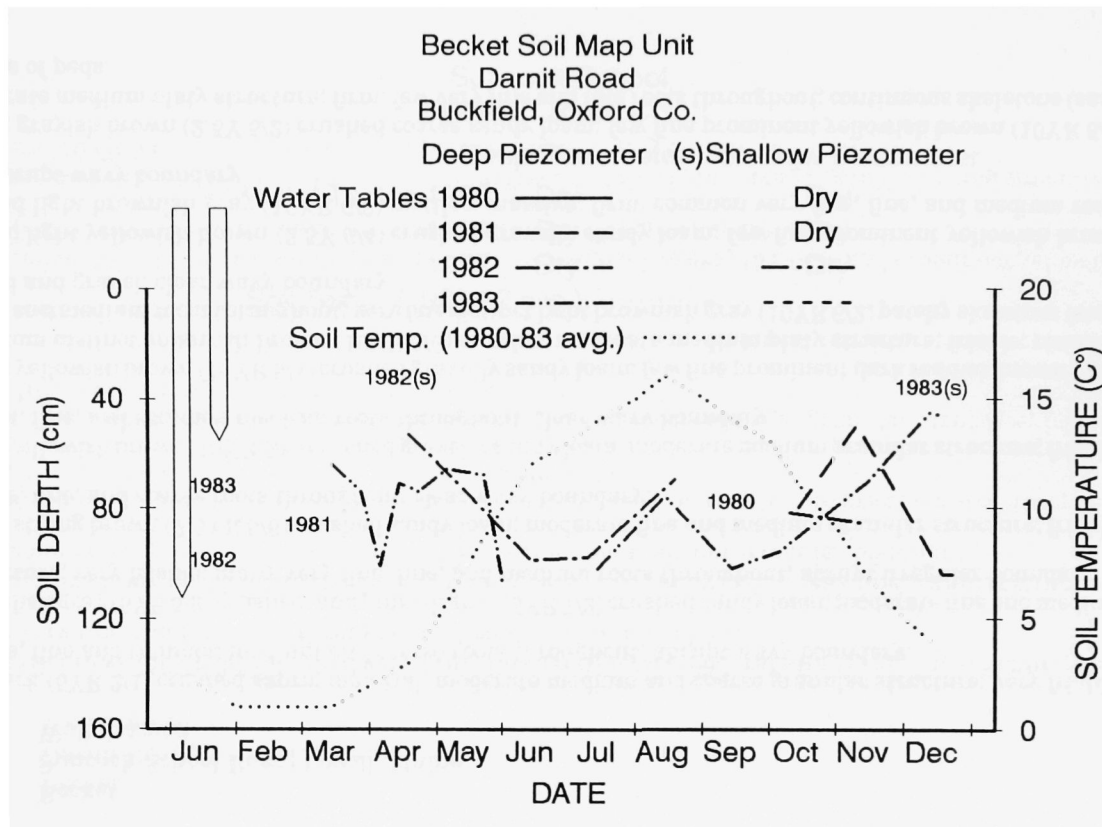
Bs2—25 to 38 cm; yellowish brown (10YR 5/6) crushed fine sandy loam; moderate fine granular structure; very friable; common very fine roots throughout; clear smooth boundary.

Bs3—38 to 44 cm; light olive brown (2.5Y 5/6) crushed sandy loam; moderate fine granular structure; friable; common very fine roots throughout; abrupt smooth boundary.

BC—44 to 60 cm; light olive brown (2.5Y 5/4) crushed sandy loam; weak thin and medium platy structure; friable; few very fine roots throughout; clear wavy boundary.

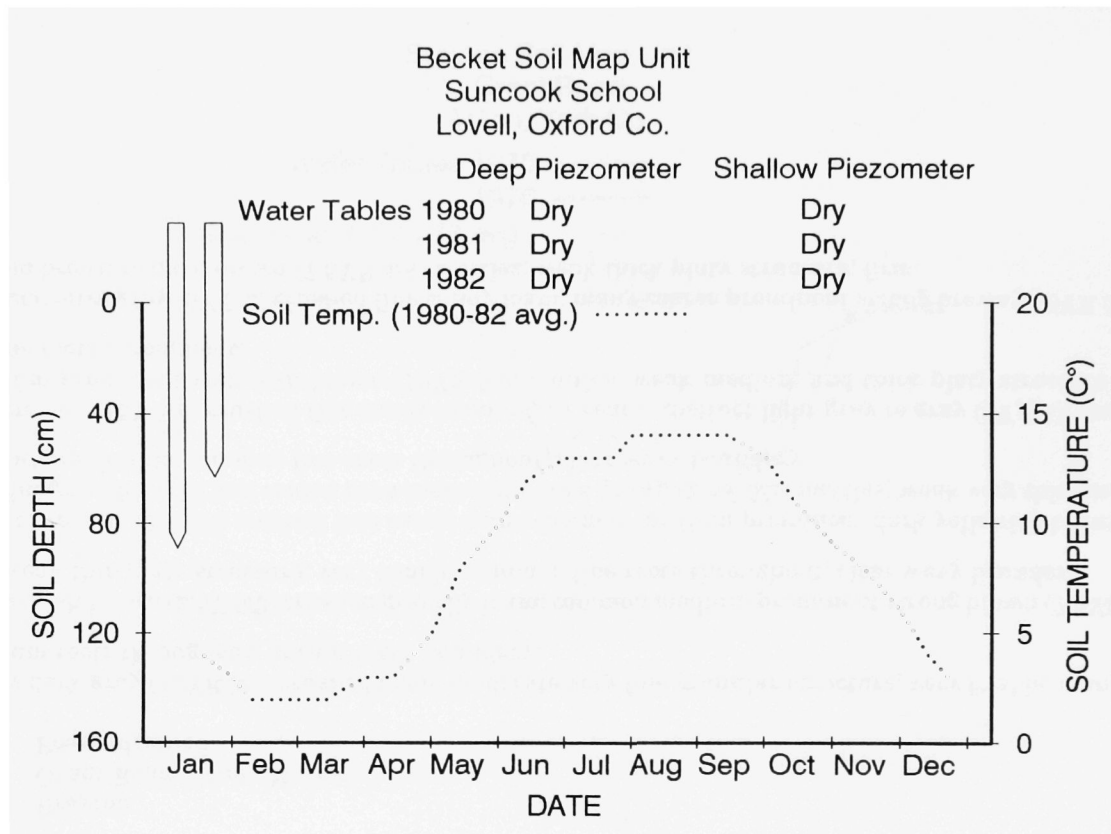
Cd1—60 to 80 cm; olive (5Y 5/3) crushed sandy loam; few fine faint light olive gray (5Y 6/2), and prominent yellowish brown (10YR 5/6) mottles; weak thin platy structure; very firm; clear wavy boundary.

Cd2—80 to 100 cm; olive (5Y 5/3) crushed fine sandy loam; few fine faint light olive gray (5Y 6/2), and prominent yellowish brown (10YR 5/6) mottles; weak thick platy structure; very firm.



Soil Map Unit: Becket
Location: Suncook School Road, Lovell, Maine
Drainage: Well drained

- Oa—0 to 4 cm; black (5YR 2/1) crushed sapric material; moderate medium and coarse granular structure; very friable; many very fine, fine and common medium and coarse roots throughout; abrupt wavy boundary.
- E—4 to 12 cm; reddish gray (5YR 5/2) crushed, and pinkish gray (5YR 7/2) crushed sandy loam; moderate fine and medium granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt irregular boundary.
- Bs1—12 to 24 cm; strong brown (7.5YR 5/6) crushed sandy loam; moderate fine and medium granular structure; friable; many very fine, fine, and coarse roots throughout; clear wavy boundary.
- Bs2—24 to 55 cm; yellowish brown (10YR 5/6) crushed gravelly sandy loam; moderate medium granular structure; friable; many very fine, fine, and common medium roots throughout; clear wavy boundary.
- BC1—55 to 66 cm; yellowish brown (10YR 5/4) crushed gravelly sandy loam; few fine prominent dark reddish brown (5YR 3/3), and medium distinct yellowish brown (10YR 5/6) mottles; moderate medium platy structure; friable; common very fine, fine, and medium roots throughout; very few distinct light brownish gray (10YR 6/2) patchy skeletons (sand or silt) on sand and gravel; clear wavy boundary.
- BC2—66 to 80 cm; light yellowish brown (2.5Y 6/4) crushed gravelly sandy loam; few fine prominent yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2) mottles; massive; firm; common very fine, fine, and medium roots throughout; abrupt wavy boundary.
- Cd—80 to 100 cm; grayish brown (2.5Y 5/2) crushed coarse sandy loam; few fine prominent yellowish brown (10YR 5/6) mottles; moderate medium platy structure; firm; few very fine and fine roots throughout; continuous skeletons (sand or silt) on faces of peds.



Soil Map Unit: **Brayton**
Location: **Grant Road, Acton, Maine**
Drainage: **Poorly drained**

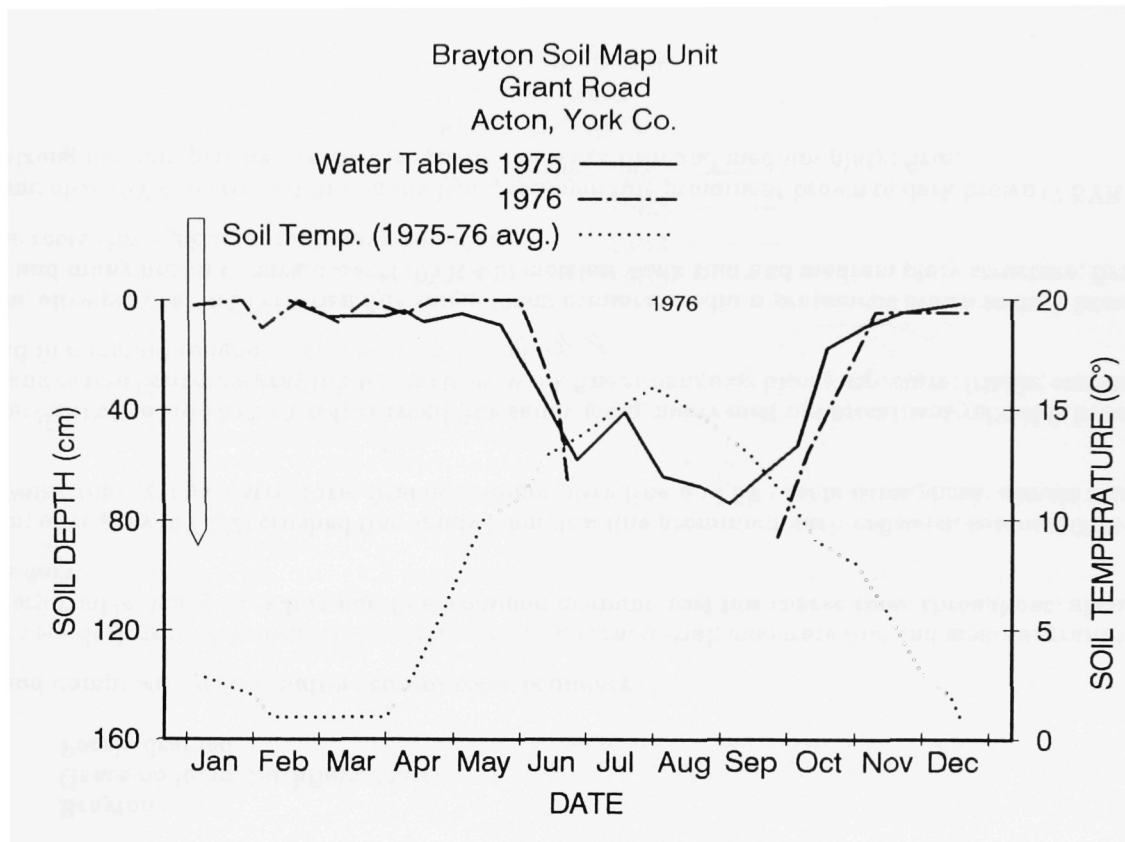
A—0 to 5 cm; very dark gray (10YR 3/1) crushed loam; moderate very fine granular structure; very friable; many fine and medium roots throughout; abrupt wavy boundary.

Eg—5 to 20 cm; grayish brown (2.5Y 5/2) crushed gravelly loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak thin platy structure; very friable; common fine roots throughout; clear wavy boundary.

Bg—20 to 32 cm; olive gray (5Y 5/2) crushed fine sandy loam; common medium prominent dark yellowish brown (10YR 4/4), faint gray (5Y 5/1), and coarse prominent light olive brown (2.5Y 5/6) mottles; weak very thin and thin platy structure; friable; common fine roots throughout; clear wavy boundary.

Cdg1—32 to 68 cm; olive (5Y 5/4) crushed fine sandy loam; many coarse distinct light gray to gray (5Y 6/1), and common medium prominent yellowish brown (10YR 5/6) mottles; weak medium and thick platy structure ; friable; few fine roots throughout.

Cdg2—68 to 100 cm; olive gray (5Y 5/2) crushed fine sandy loam; many coarse prominent strong brown (7.5YR 5/6), and common brown to dark brown (7.5YR 4/4) mottles; weak thick platy structure; firm.



Soil Map Unit: Brayton
Location: Gammon Road, Buckfield, Maine
Drainage: Poorly drained

Oi—5 to 0 cm undecomposed organic matter; abrupt wavy boundary.

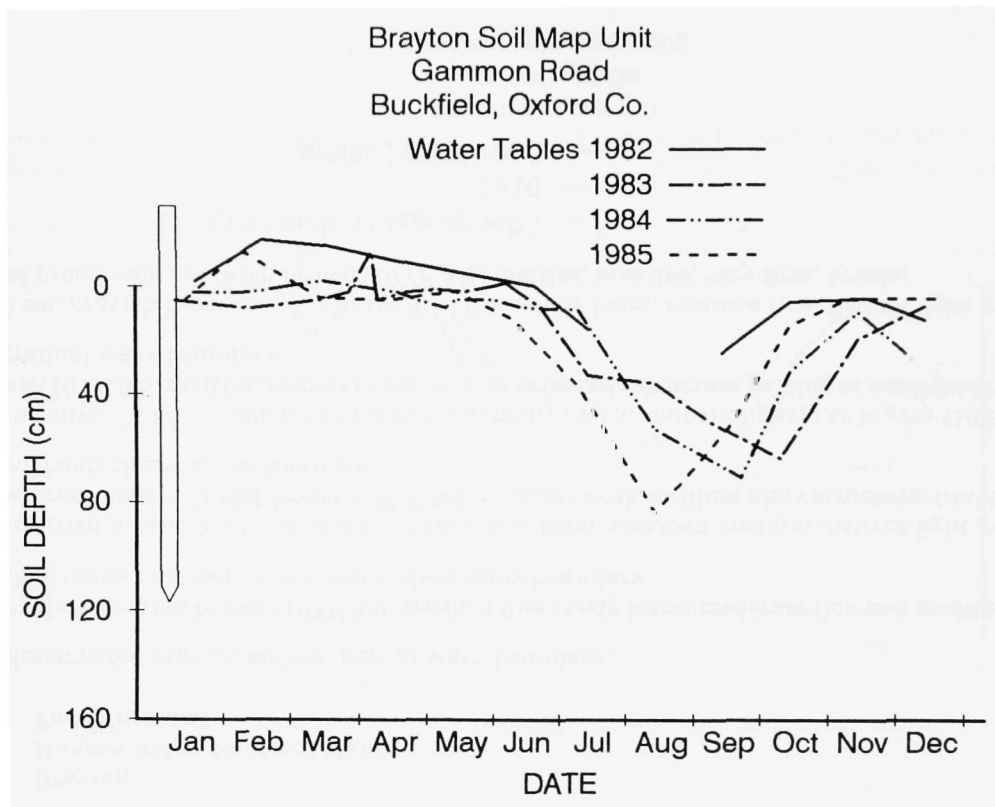
Oa—0 to 10 cm; very dark grayish brown (10YR 3/2) crushed sapric material; moderate fine and medium granular structure; very friable; many very fine and fine, common medium, and few coarse roots throughout; abrupt smooth boundary.

Eg—10 to 15 cm; olive gray (5Y 5/2) crushed fine sandy loam; few fine prominent dark yellowish brown (10YR 4/4) mottles; weak fine granular structure; friable; common very fine and fine roots throughout; abrupt wavy boundary.

Bg—15 to 25 cm; light olive brown (2.5Y 5/4) crushed fine sandy loam; many medium prominent yellowish brown (10YR 5/6), and coarse light olive gray (5Y 6/2) mottles; weak fine subangular blocky structure; friable; common very fine and fine roots throughout; abrupt wavy boundary.

Eg—25 to 38 cm; olive gray (5Y 5/2) crushed fine sandy loam; common medium prominent brown to dark brown (7.5YR 4/4), and many brown to dark brown (10YR 4/3) mottles; weak thin and medium platy structure; firm; few very fine roots throughout; abrupt wavy boundary.

Cd—38 to 100 cm; olive (5Y 4/3) crushed fine sandy loam; common fine prominent brown to dark brown (7.5YR 4/4) mottles; strong medium prismatic structure parting to weak thin and medium platy; firm.



Soil Map Unit: Brayton
Location: Hanson Ridge, Sanford, Maine
Drainage: Poorly drained

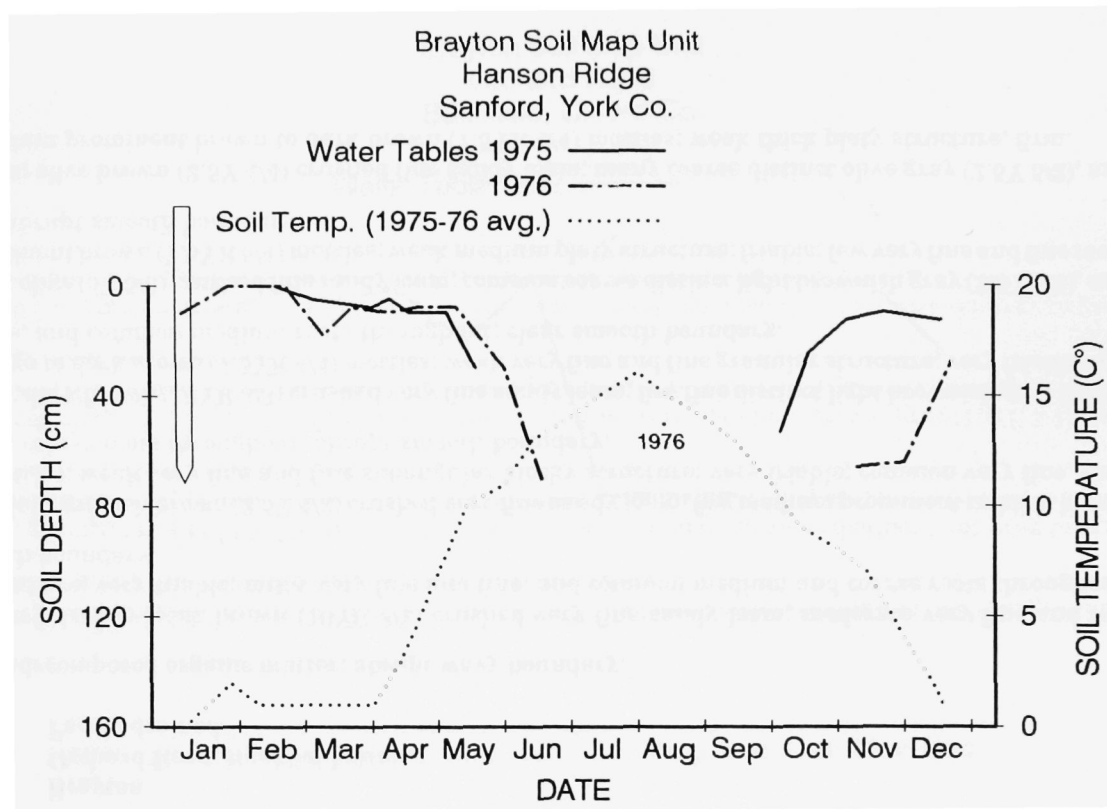
Oi—2 to 0 cm undecomposed organic matter; abrupt wavy boundary.

A—0 to 12 cm; very dark grayish brown (10YR 3/2) crushed fine sandy loam; moderate fine and medium granular structure; friable; many fine roots throughout; clear wavy boundary.

Bg—12 to 28 cm; grayish brown (2.5Y 5/2) crushed fine sandy loam; common medium distinct light gray to gray (10YR 6/1), and prominent yellowish brown (10YR 5/4) mottles; weak medium platy structure; friable; common fine roots throughout; clear smooth boundary.

Cdg1—28 to 109 cm; olive (5Y 5/3) crushed fine sandy loam; many fine prominent light gray to gray (10YR 6/1), and yellowish brown (10YR 5/6) mottles; moderate very coarse prismatic structure parting to weak thick platy; very firm, brittle; gradual wavy boundary.

Cdg2—109 to 150 cm; grayish brown (2.5Y 5/2) crushed fine sandy loam; common fine distinct light gray to gray (10YR 6/1), and prominent yellowish brown (10YR 5/6) mottles; massive; very firm, brittle.



Soil Map Unit: **Brayton**
Location: **Orchard Road, Buckfield, Maine**
Drainage: **Poorly drained**

Oi—2 to 0 cm undecomposed organic matter; abrupt wavy boundary.

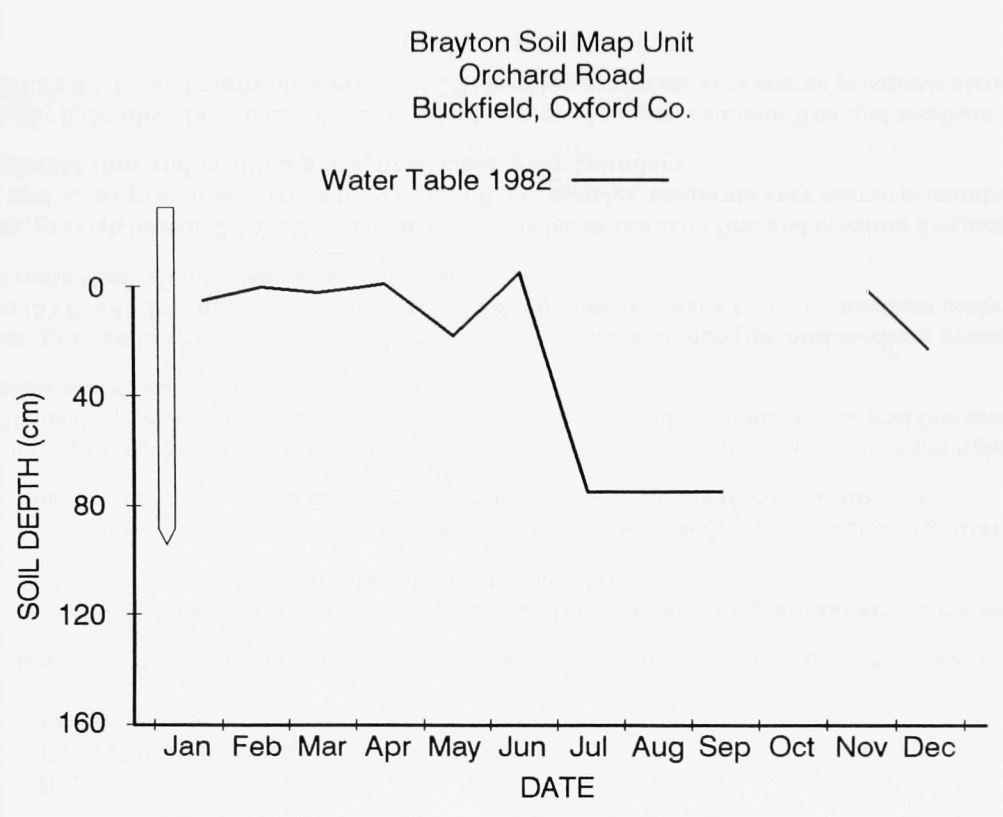
A—0 to 8 cm; very dark grayish brown (10YR 3/2) crushed very fine sandy loam; moderate very fine and fine granular structure; very friable; many very fine and fine, and common medium and coarse roots throughout; abrupt smooth boundary.

Eg—8 to 13 cm; dark grayish brown (2.5Y 4/2) crushed very fine sandy loam; few medium prominent reddish brown (5YR 4/4) mottles; weak very fine and fine subangular blocky structure; very friable; common very fine, fine, medium, and coarse roots throughout; abrupt smooth boundary.

Bw—13 to 25 cm; dark brown (10YR 3/3) crushed very fine sandy loam; few fine distinct light brownish gray (10YR 6/2), and brown to dark brown (7.5YR 4/4) mottles; weak very fine and fine granular structure; very friable; few very fine, fine, and common medium roots throughout; clear smooth boundary.

BC—25 to 41 cm; olive (5Y 5/3) crushed fine sandy loam; common coarse distinct light brownish gray (2.5Y 6/2), and few fine prominent brown (7.5YR 5/4) mottles; weak medium platy structure; friable; few very fine and fine roots throughout; abrupt smooth boundary.

Cd—41 to 100 cm; olive brown (2.5Y 4/4) crushed fine sandy loam; many coarse distinct olive gray (2.5Y 5/2), and common medium prominent brown to dark brown (7.5YR 4/4) mottles; weak thick platy structure; firm.



Soil Map Unit: Brayton
Location: Paris Hill, Paris, Maine
Drainage: Poorly drained

Oi—5 to 0 cm undecomposed organic matter; many very fine and fine roots throughout; abrupt wavy boundary.

Oa—0 to 2 cm; dark reddish brown (5YR 2/2) crushed sapric material; weak fine granular structure; very friable; many fine and medium roots throughout; abrupt smooth boundary.

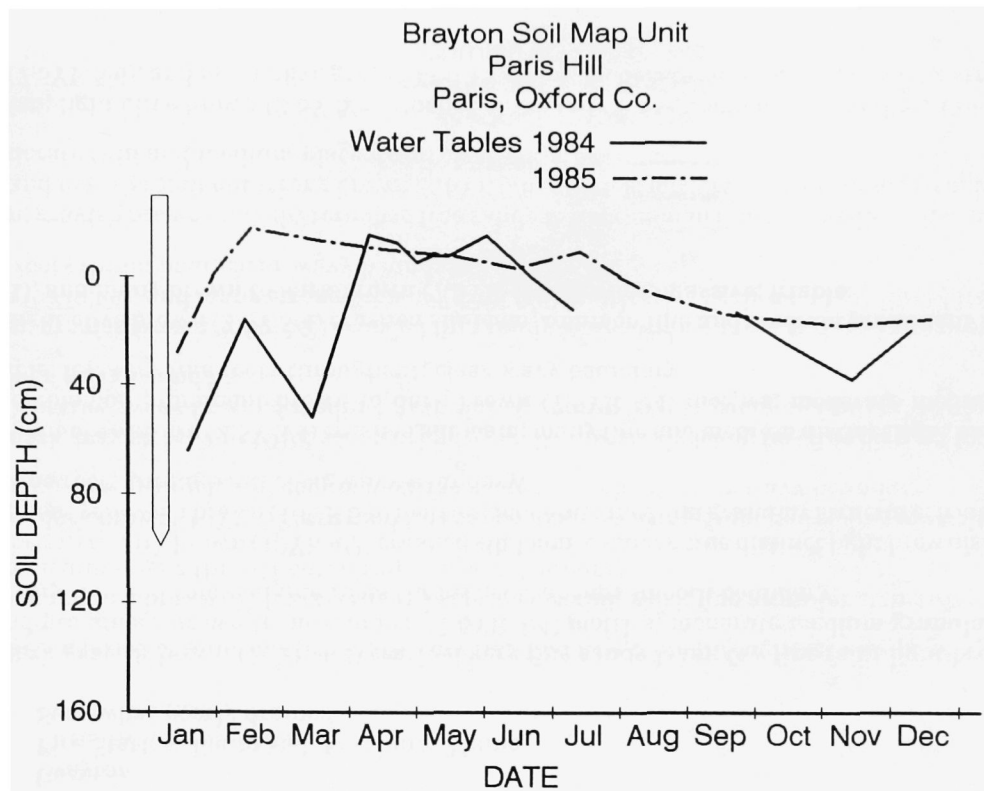
A—2 to 23 cm; very dark brown (10YR 2/2) crushed fine sandy loam; weak medium and coarse granular structure; friable; many fine, few medium, and common coarse roots throughout; clear wavy boundary.

Eg—23 to 28 cm; dark grayish brown (10YR 4/2) crushed gravelly fine sandy loam; few fine distinct light brownish gray (2.5Y 6/2) mottles; weak fine and medium granular structure; friable; common fine and few medium roots throughout; clear wavy boundary.

Cdg1—28 to 38 cm; grayish brown (2.5Y 5/2) crushed fine sandy loam; common fine and medium prominent dark reddish brown (5YR 3/4), and many strong brown (7.5YR 5/6) mottles; weak thin and medium platy structure; firm; few fine roots throughout; clear wavy boundary.

Cdg2—38 to 50 cm; grayish brown (2.5Y 5/2) crushed fine sandy loam; common fine and medium distinct light olive gray (5Y 6/2), and many prominent strong brown (7.5YR 5/6) mottles; moderate very coarse prismatic structure parting to moderate thin and medium platy; firm; clear wavy boundary.

Cdg3—50 to 100 cm; light olive brown (2.5Y 5/4) crushed fine sandy loam; common fine and medium prominent strong brown (7.5YR 5/6), and many olive gray (5Y 5/2) mottles; moderate very coarse prismatic structure; very firm.



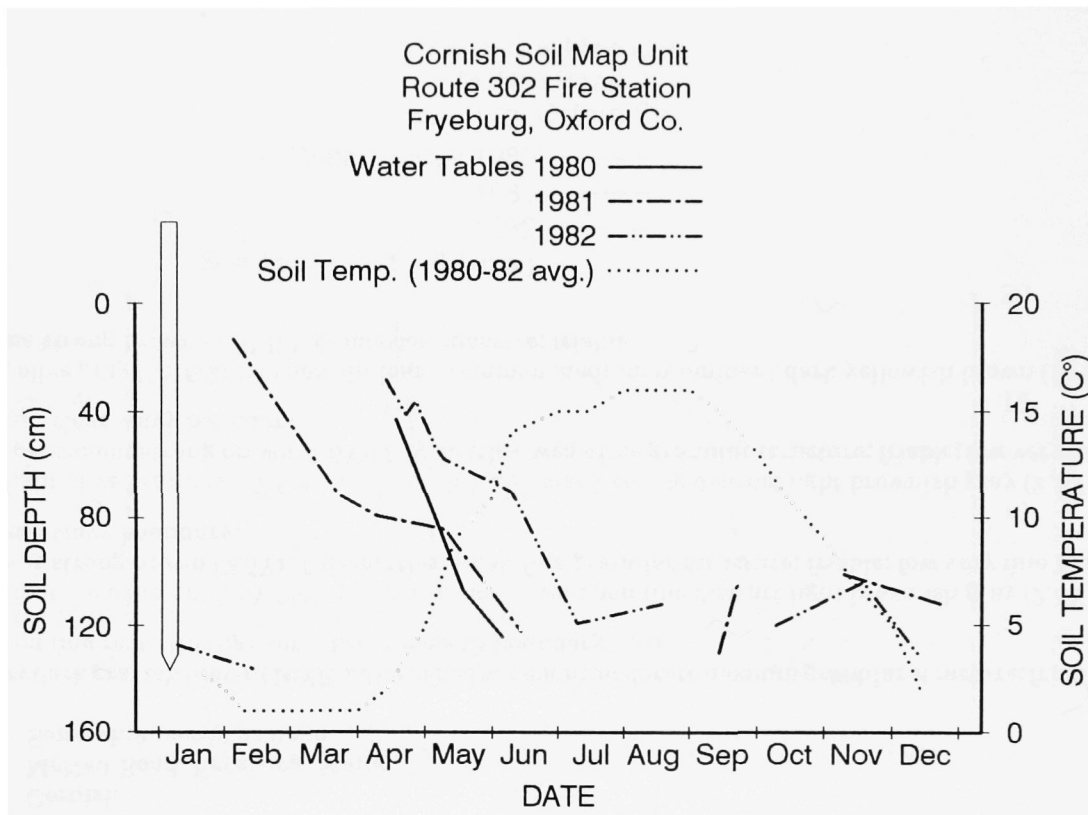
Soil Map Unit: **Cornish**
Location: **Fire Station, Route 302, Fryeburg, Maine**
Drainage: **Somewhat poorly drained**

Ap—0 to 36 cm; dark grayish brown (10YR 4/2) crushed very fine sandy loam; few fine faint light brownish gray (10YR 6/2), and prominent brown to dark brown (7.5YR 4/4) mottles; moderate medium granular structure; friable; many very fine and common fine roots throughout; abrupt smooth boundary.

Bw—36 to 53 cm; brown to dark brown (10YR 4/3) crushed silt loam; common fine distinct light brownish gray (2.5Y 6/2), and prominent yellowish brown (10YR 5/6) mottles; moderate medium granular structure; friable; common very fine and fine roots throughout; clear wavy boundary.

BC—53 to 76 cm; light olive brown (2.5Y 5/4) crushed silt loam; many fine and medium distinct light brownish gray (2.5Y 6/2), and common prominent brown to dark brown (7.5YR 4/4) mottles; moderate medium granular structure; friable; few very fine roots throughout; clear wavy boundary.

C—76 to 150 cm; light olive brown (2.5Y 5/4) crushed silt loam; common fine and medium prominent light gray to gray (10YR 6/1), and many brown to dark brown (7.5YR 4/4) mottles; massive; friable.



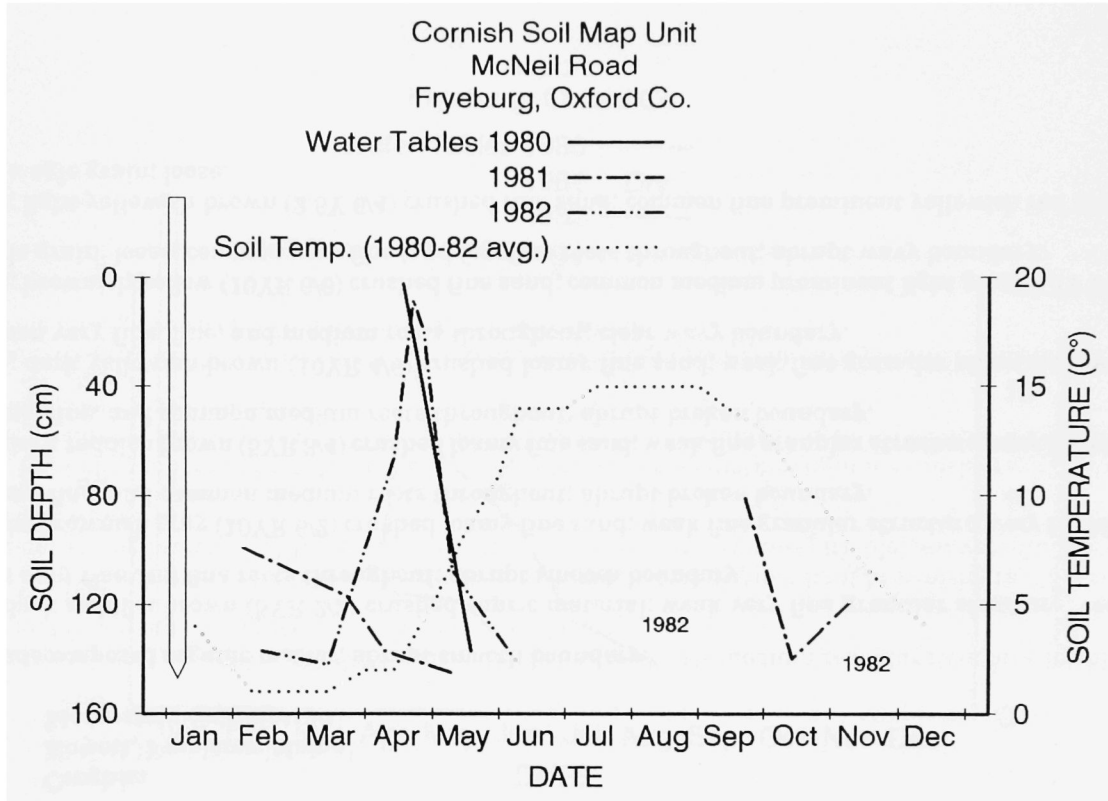
Soil Series: Cornish
Location: McNeil Road, Fryeburg, Maine
Drainage: Somewhat poorly drained

Ap—0 to 30 cm; very dark grayish brown (10YR 3/2) crushed silt loam; moderate medium granular structure; friable; few very fine and fine roots throughout; abrupt smooth boundary.

C1—30 to 61 cm; light olive brown (2.5Y 5/4) crushed silt loam; common fine distinct light brownish gray (2.5Y 6/2) and prominent strong brown (7.5YR 5/6) mottles; weak fine granular structure; friable; few very fine roots throughout; clear wavy boundary.

C2—61 to 89 cm; light olive brown (2.5Y 5/4) crushed silt loam; many coarse distinct light brownish gray (2.5Y 6/2) and few fine prominent strong brown (7.5YR 5/6) mottles; weak fine granular structure; friable; few very fine roots throughout; clear wavy boundary.

C3—89 to 152 cm; olive gray (5Y 5/2) crushed silt loam; common medium prominent dark yellowish brown (10YR 4/4) and few fine strong brown (7.5YR 5/6) mottles; massive; friable.



Soil Map Unit: Croghan
Location: Airport, Fryeburg, Maine
Drainage: Moderately well drained

Oi—5 to 0 cm undecomposed organic matter; abrupt smooth boundary.

Oa—0 to 2 cm; dark reddish brown (5YR 2/2) crushed sapric material; weak very fine granular structure; very friable; many very fine and fine roots throughout; abrupt smooth boundary.

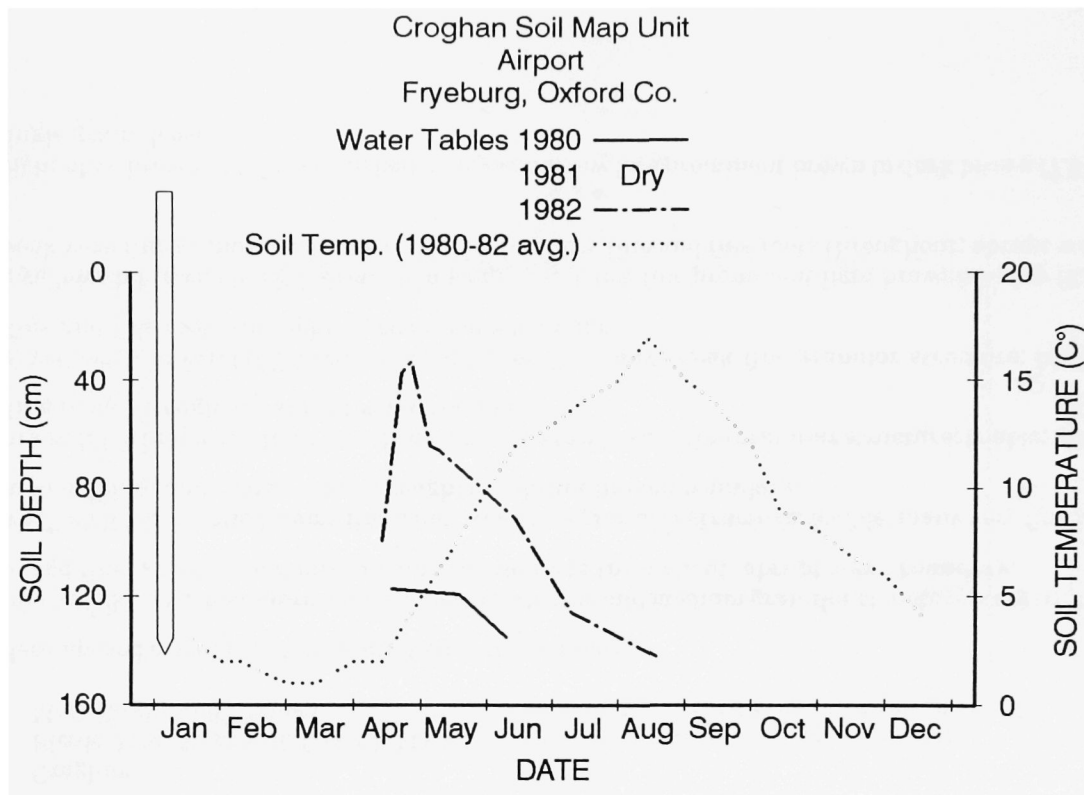
E—2 to 5 cm; light brownish gray (10YR 6/2) crushed loamy fine sand; weak fine granular structure; very friable; many very fine, fine, and common medium roots throughout; abrupt broken boundary.

Bh—5 to 10 cm; dark reddish brown (5YR 3/4) crushed loamy fine sand; weak fine granular structure; very friable; many very fine, fine, and common medium roots throughout; abrupt broken boundary.

Bs—10 to 36 cm; dark yellowish brown (10YR 4/6) crushed loamy fine sand; weak fine granular structure; very friable; common very fine, fine, and medium roots throughout; clear wavy boundary.

BC—36 to 50 cm; brownish yellow (10YR 6/6) crushed fine sand; common medium prominent light gray (2.5Y 7/2) mottles; single grain; loose; common very fine, and few fine roots throughout; abrupt wavy boundary.

C—50 to 150 cm; light yellowish brown (2.5Y 6/4) crushed fine sand; common fine prominent yellowish red (5YR 4/6) mottles; single grain; loose.



Soil Map Unit: Croghan
Location: Picnic Area, Route 26, Oxford, Maine
Drainage: Moderately well drained

Oi—5 to 0 cm undecomposed organic matter; abrupt smooth boundary.

Oa—0 to 2 cm; black (5YR 2/1) crushed sapric material; moderate fine and medium granular structure; very friable; many very fine and fine, and common medium and coarse roots throughout; abrupt wavy boundary.

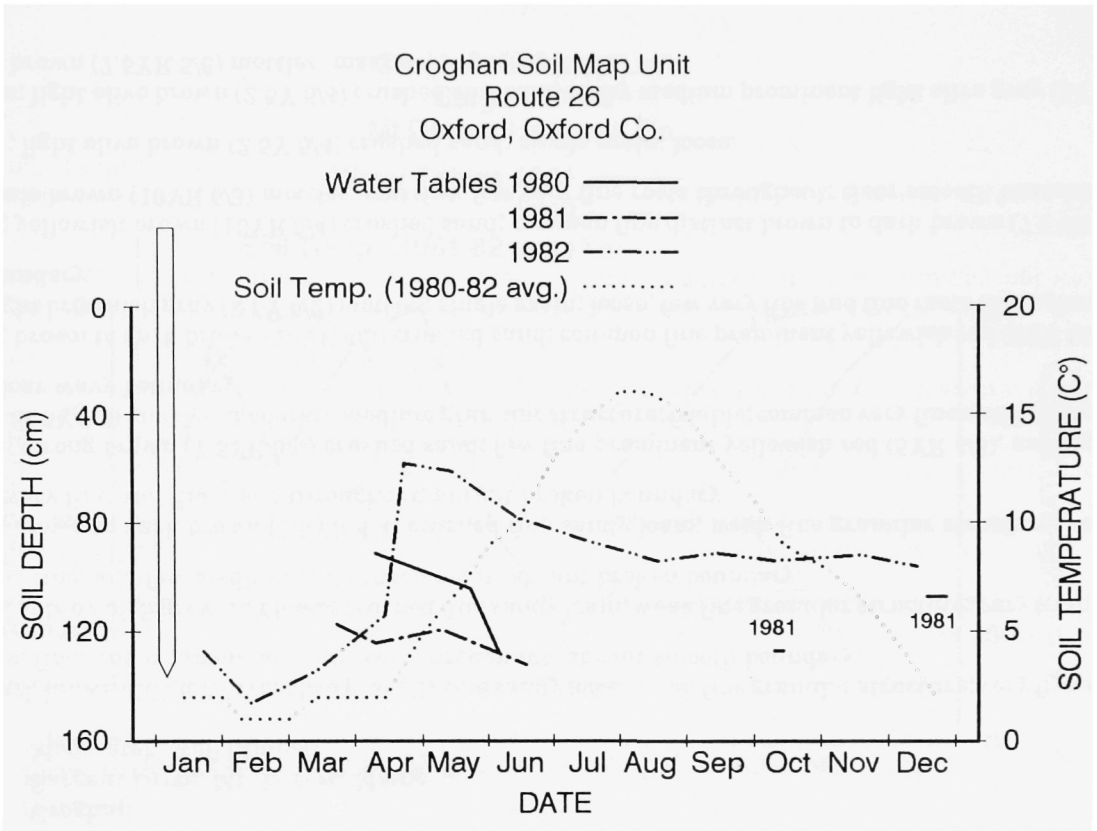
E—2 to 8 cm; brown (7.5YR 5/2) crushed loamy fine sand; weak fine granular structure; friable; many very fine and fine, and common medium and coarse roots throughout; abrupt broken boundary.

Bh—8 to 13 cm; dark reddish brown (5YR 3/4) crushed loamy fine sand; weak fine granular structure; friable; many very fine and fine roots throughout; abrupt wavy boundary.

Bs1—13 to 41 cm; yellowish brown (10YR 5/6) crushed loamy fine sand; weak fine granular structure; friable; common very fine and fine roots throughout; clear wavy boundary.

Bs2—41 to 53 cm; yellowish brown (10YR 5/6) crushed loamy sand; few fine prominent light brownish gray (2.5Y 6/2) mottles; weak very fine granular structure; friable; few very fine and fine roots throughout; abrupt wavy boundary.

C—53 to 140 cm; light olive brown (2.5Y 5/4) crushed loamy sand; few fine prominent brown to dark brown (7.5YR 4/4) mottles; single grain; loose.



Soil Map Unit: Croghan
Location: Sargent Drive, Mt. Desert, Maine
Drainage: Moderately well drained

Ap—0 to 23 cm; dark brown (10YR 3/3) crushed gravelly fine sandy loam; weak fine granular structure; very friable; many very fine, fine, and common medium roots throughout; abrupt smooth boundary.

E—23 to 28 cm; light brownish gray (10YR 6/2) crushed fine sandy loam; weak fine granular structure; very friable; many very fine, fine, and few medium roots throughout; abrupt broken boundary.

Bh—28 to 36 cm; brown to dark brown (7.5YR 4/4) crushed fine sandy loam; weak fine granular structure; very friable; many very fine and fine roots throughout; abrupt broken boundary.

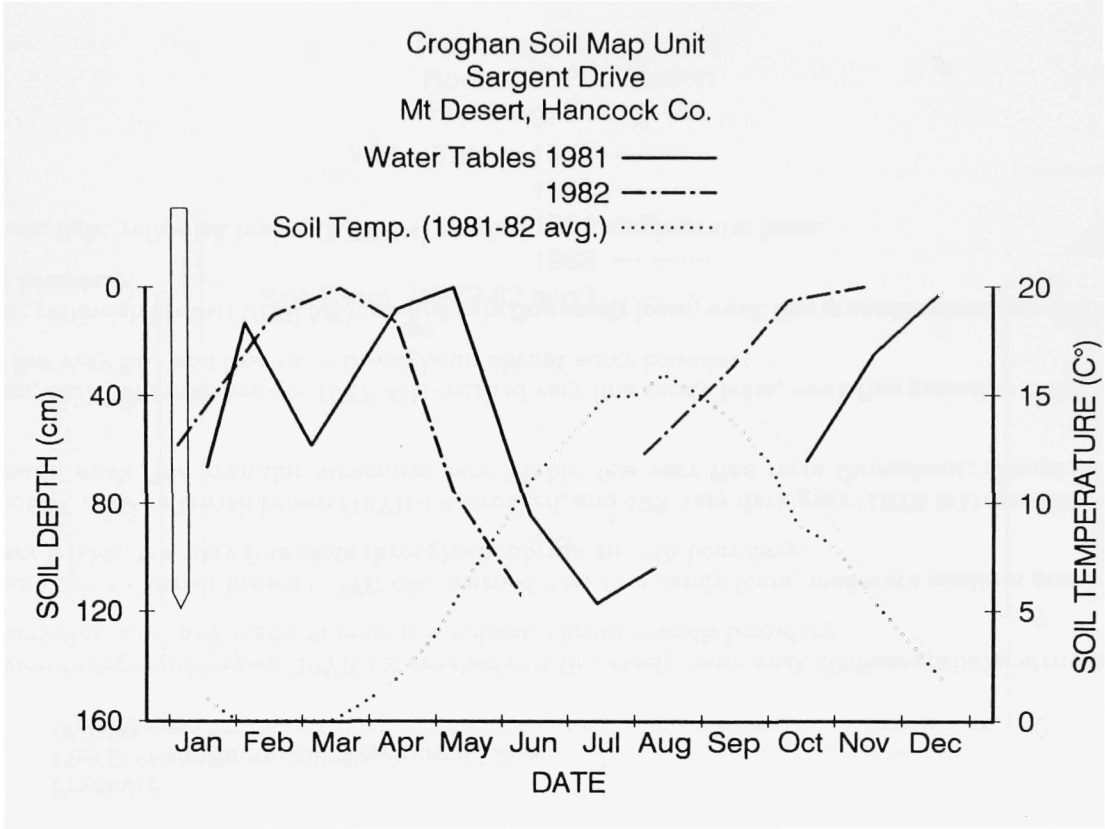
Bs1—36 to 58 cm; strong brown (7.5YR 5/6) crushed sand; few fine prominent yellowish red (5YR 4/8), and light brownish gray (2.5Y 6/2) mottles; moderate medium granular structure; friable; common very fine and fine roots throughout; clear wavy boundary.

Bs2—58 to 76 cm; brown to dark brown (10YR 4/3) crushed sand; common fine prominent yellowish red (5YR 5/6), and distinct light brownish gray (2.5Y 6/2) mottles; single grain; loose; few very fine and fine roots throughout; clear wavy boundary.

Bs3—76 to 86 cm; yellowish brown (10YR 5/4) crushed sand; common fine distinct brown to dark brown (7.5YR 4/4), and faint pale brown (10YR 6/3) mottles; massive; few very fine roots throughout; clear smooth boundary.

C1—86 to 145 cm; light olive brown (2.5Y 5/4) crushed sand; single grain; loose.

C2—145 to 150 cm; light olive brown (2.5Y 5/4) crushed silt loam; many medium prominent light olive gray (5Y 6/2), and strong brown (7.5YR 5/6) mottles; massive; slightly plastic.



Soil Map Unit: Fryeburg
Location: Fire Station, Route 302, Fryeburg, Maine
Drainage: Well drained

Ap—0 to 33 cm; very dark grayish brown (10YR 3/2) crushed very fine sandy loam; weak medium granular structure; friable; few very fine, fine, and medium roots throughout; abrupt smooth boundary.

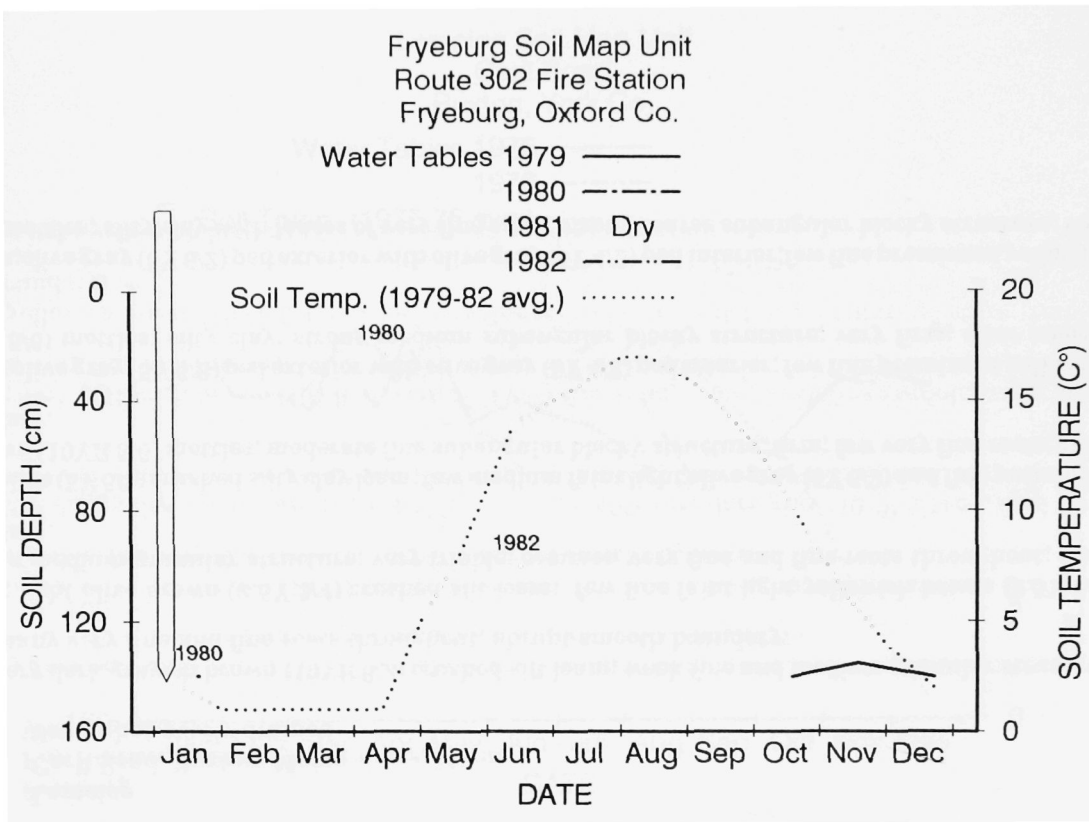
Bw—33 to 66 cm; dark yellowish brown (10YR 4/4) crushed very fine sandy loam; moderate medium granular structure; very friable; few very fine roots throughout; abrupt smooth boundary.

Ab—66 to 74 cm; 60% dark yellowish brown (10YR 4/4) crushed, and 40% very dark gray (10YR 3/1) crushed very fine sandy loam; weak fine granular structure; very friable; few very fine roots throughout; abrupt wavy boundary.

Bwb—74 to 91 cm; dark yellowish brown (10YR 4/4) crushed very fine sandy loam; weak fine granular structure; very friable; few very fine and fine roots throughout; abrupt wavy boundary.

C1—91 to 112 cm; yellowish brown (10YR 5/4) crushed very fine sandy loam; weak fine granular structure; friable; abrupt wavy boundary.

C2—112 to 150 cm; light yellowish brown (2.5Y 6/4) crushed sand; single grain; loose.



Soil Series: Lamoine
Location: Carll Road, Buxton, Maine
Drainage: Somewhat poorly drained

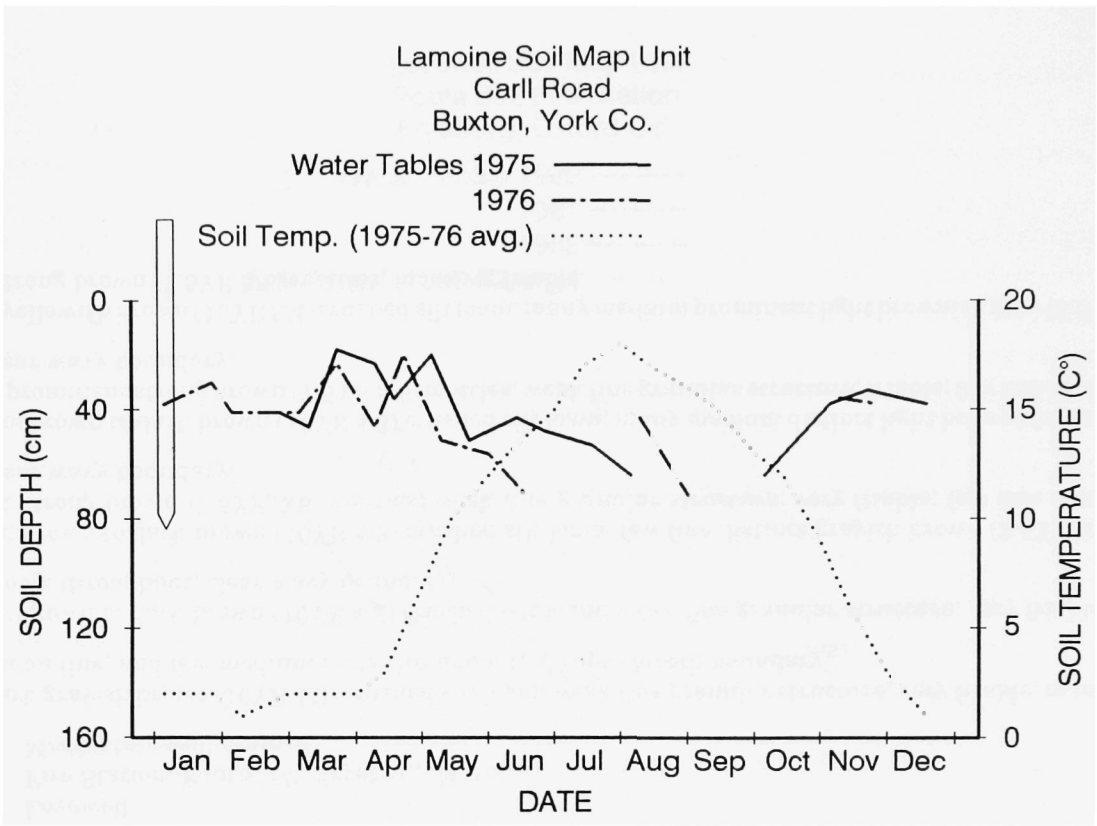
Ap—0 to 13 cm; very dark grayish brown (10YR 3/2) crushed silt loam; weak fine and medium granular structure; very friable; many very fine and fine roots throughout; abrupt smooth boundary.

Bw—13 to 28 cm; light olive brown (2.5Y 5/4) crushed silt loam: few fine faint light yellowish brown (2.5Y 6/4) mottles; strong medium granular structure; very friable; common very fine and fine roots throughout; clear smooth boundary.

Eg—28 to 38 cm; olive (5Y 5/3) crushed silty clay loam; few medium faint light olive gray (5Y 6/2) and fine prominent yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky structure; firm; few very fine roots; clear smooth boundary.

Cg1—38 to 91 cm; olive gray (5Y 5/2) ped exterior with olive gray (5Y 4/2) ped interior; few fine prominent yellowish brown (10YR 5/6) mottles; silty clay; strong medium subangular blocky structure; very firm; clear smooth boundary.

Cg2—91 to 150 cm; olive gray (5Y 6/2) ped exterior with olive gray (5Y 4/2) ped interior; few fine prominent yellowish red (5YR 4/6) mottles; silty clay with lenses of very fine sand; strong coarse subangular blocky structure; very firm.



Soil Map Unit: Lovewell
Location: Fire Station, Route 302, Fryeburg, Maine
Drainage: Moderately well drained

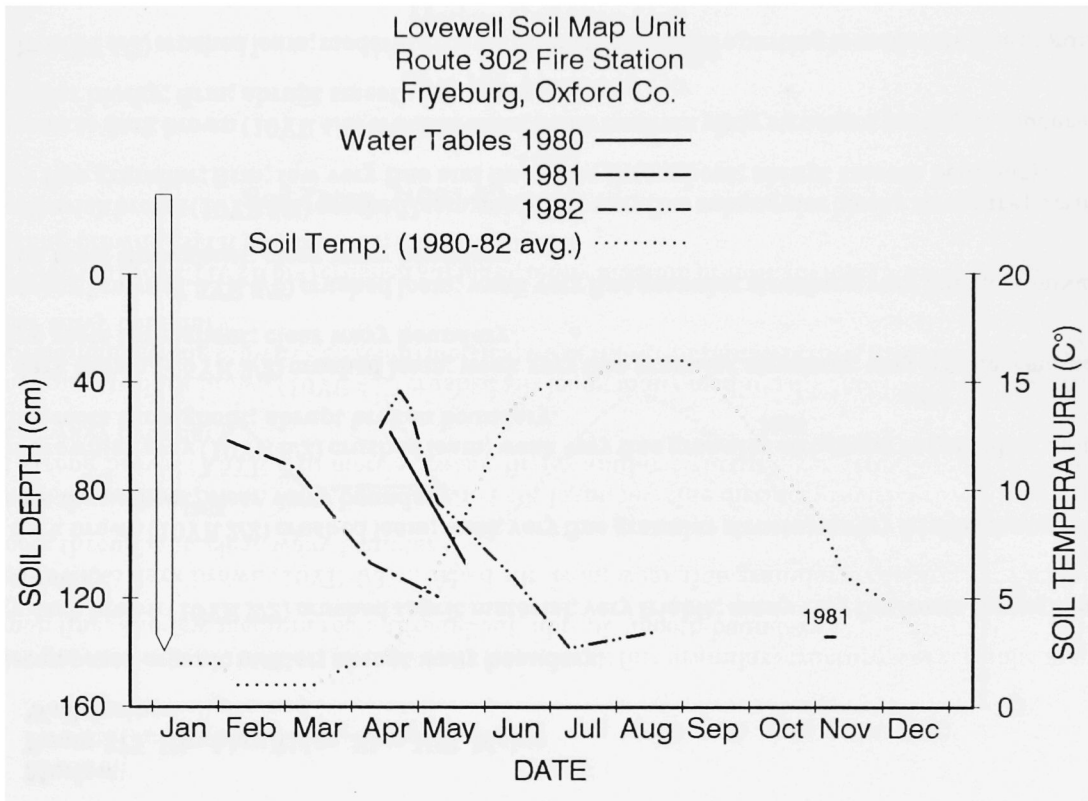
Ap—0 to 36 cm; dark grayish brown (10YR 4/2) crushed silt loam; weak fine granular structure; very friable; many very fine, common fine, and few medium roots throughout; abrupt smooth boundary.

Bw1—36 to 56 cm; brown to dark brown (10YR 4/3) crushed silt loam; weak fine granular structure; very friable; common fine roots throughout; clear wavy boundary.

Bw2—56 to 79 cm; brown to dark brown (10YR 4/3) crushed silt loam; few fine distinct grayish brown (2.5Y 5/2), and prominent strong brown (7.5YR 5/6) mottles; weak fine granular structure; very friable; few fine roots throughout; clear wavy boundary.

Bw3—79 to 104 cm; brown to dark brown (10YR 4/3) crushed silt loam; many medium distinct light brownish gray (2.5Y 6/2), and prominent strong brown (7.5YR 5/6) mottles; weak fine granular structure; friable; few fine roots throughout; clear wavy boundary.

C—104 to 150 cm; yellowish brown (10YR 5/4) crushed silt loam; many medium prominent light brownish gray (2.5Y 6/2), and few strong brown (7.5YR 5/6) mottles; massive; friable.



Soil Map Unit: Marlow
Location: Route 177, Hinckley Ridge, Blue Hill, Maine
Drainage: Well drained

Oi—5 to 0 cm undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 5 cm; very dark brown (10YR 2/2) crushed sapric material; very friable; many very fine roots throughout; abrupt wavy boundary.

A—5 to 8 cm; very dark brown (10YR 2/2) crushed loam; weak very fine granular structure; very friable; many very fine and fine roots throughout; clear wavy boundary.

E—8 to 10 cm; light brownish gray (10YR 6/2) crushed loam; weak very fine granular structure; very friable; many very fine and fine roots throughout; abrupt broken boundary.

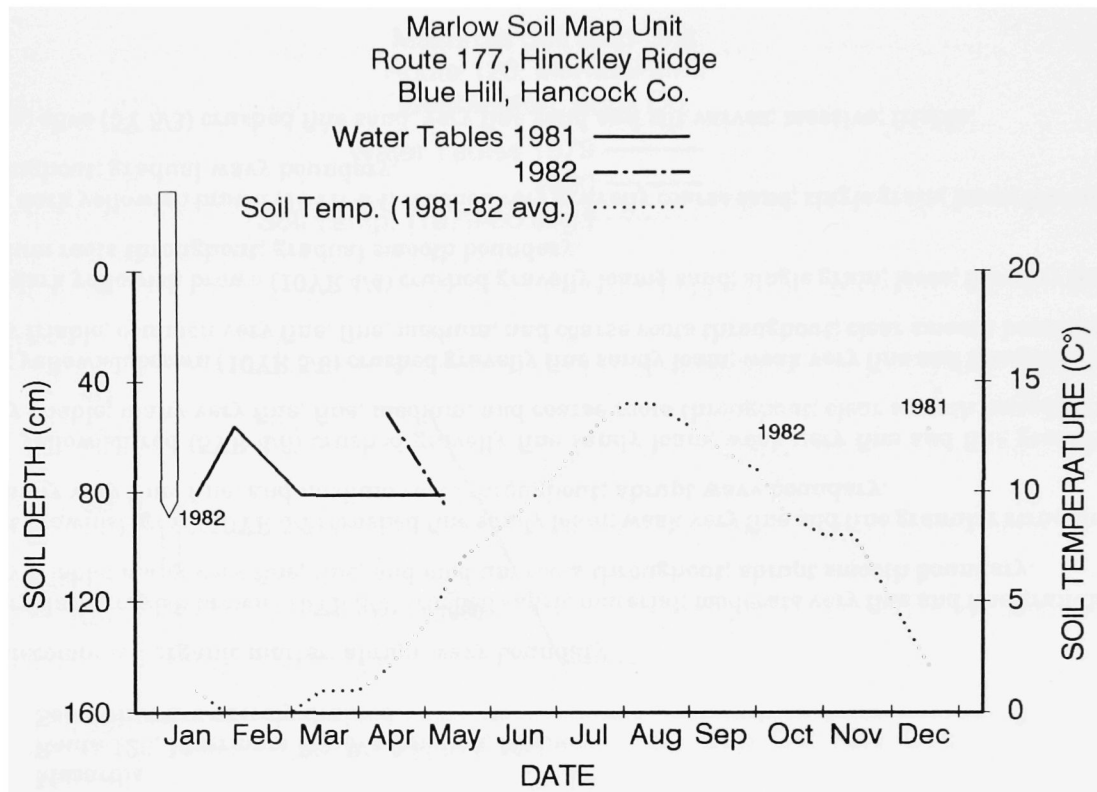
Bhs—10 to 13 cm; dark brown (7.5YR 3/2) crushed loam; weak very fine granular structure; very friable; common very fine and fine roots throughout; clear wavy boundary.

Bs1—13 to 25 cm; strong brown (7.5YR 5/6) crushed loam; weak very fine granular structure; very friable; common very fine and fine roots throughout; clear wavy boundary.

Bs2—25 to 53 cm; yellowish brown (10YR 5/4) crushed loam; moderate very fine subangular blocky structure parting to moderate very fine granular; firm; few very fine and fine roots throughout; abrupt smooth boundary.

BC—53 to 91 cm; brown to dark brown (10YR 4/3) crushed loam; weak medium platy structure parting to moderate very fine subangular blocky; firm; abrupt smooth boundary.

Cd—91 to 100 cm; olive (5Y 4/3) crushed loam; moderate coarse prismatic structure parting to moderate fine angular blocky; very firm.



Soil Map Unit: Masardis
Location: Route 126, Marriners Pit, Washington, Maine
Drainage: Somewhat excessively drained

Oi—2 to 0 cm undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 2 cm; very dark grayish brown (10YR 3/2) crushed sapric material; moderate very fine and fine granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt smooth boundary.

E—2 to 8 cm; light brownish gray (10YR 6/2) crushed fine sandy loam; weak very fine and fine granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt wavy boundary.

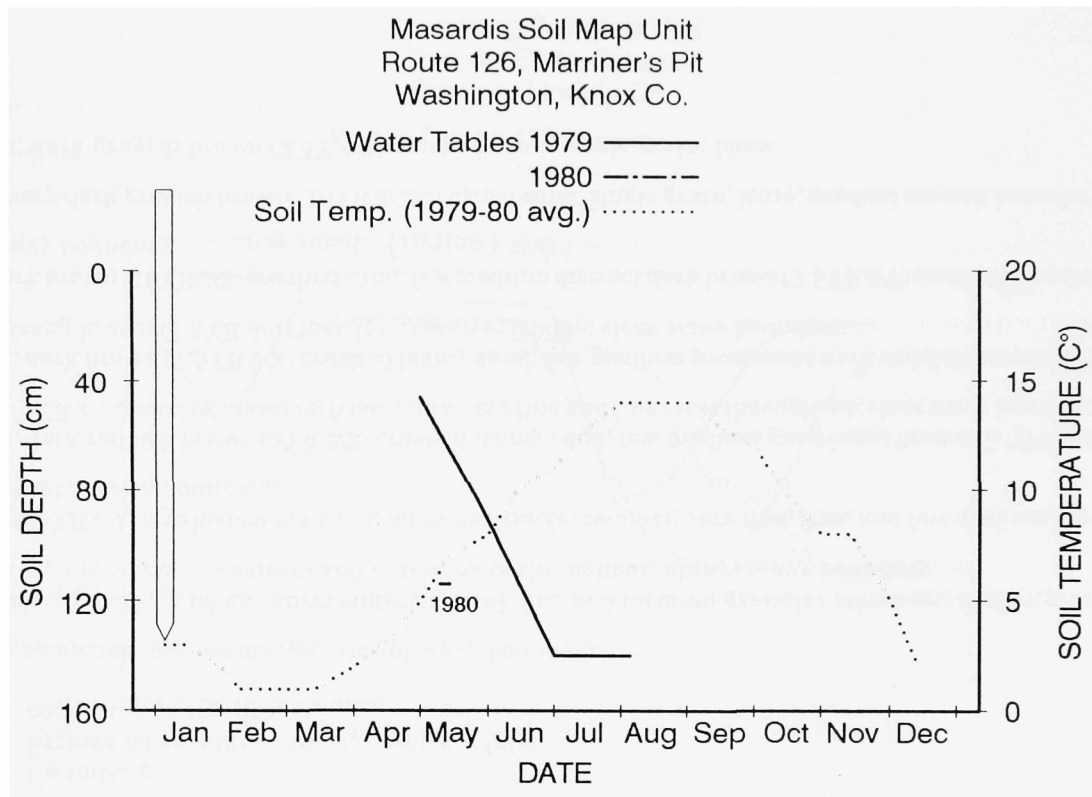
Bs1—8 to 15 cm; yellowish red (5YR 4/6) crushed gravelly fine sandy loam; weak very fine and fine granular structure; very friable; many very fine, fine, medium, and coarse roots throughout; clear smooth boundary.

Bs2—15 to 33 cm; yellowish brown (10YR 5/6) crushed gravelly fine sandy loam; weak very fine and fine granular structure; very friable; common very fine, fine, medium, and coarse roots throughout; clear smooth boundary.

BC—33 to 50 cm; dark yellowish brown (10YR 4/4) crushed gravelly loamy sand; single grain; loose; few very fine, fine, and medium roots throughout; gradual smooth boundary.

C1—50 to 190 cm; dark yellowish brown (10YR 4/4) crushed very gravelly coarse sand; single grain; loose; few very fine roots throughout; gradual wavy boundary.

C2—190 to 200 cm; olive (5Y 5/3) crushed fine sand, very fine sand and silt varves; massive; friable.



Soil Map Unit: Naumburg
Location: Bremen Elementary School, Bremen, Maine
Drainage: Somewhat poorly drained

Oi—2 to 0 cm undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 8 cm; black (5YR 2/1) crushed sapric material; weak fine and medium granular structure; friable; many very fine and fine, and common medium and coarse roots throughout; abrupt wavy boundary.

E—8 to 28 cm; gray (5YR 5/1) crushed loamy sand; massive; friable; common very fine, fine, and few medium roots throughout; abrupt smooth boundary.

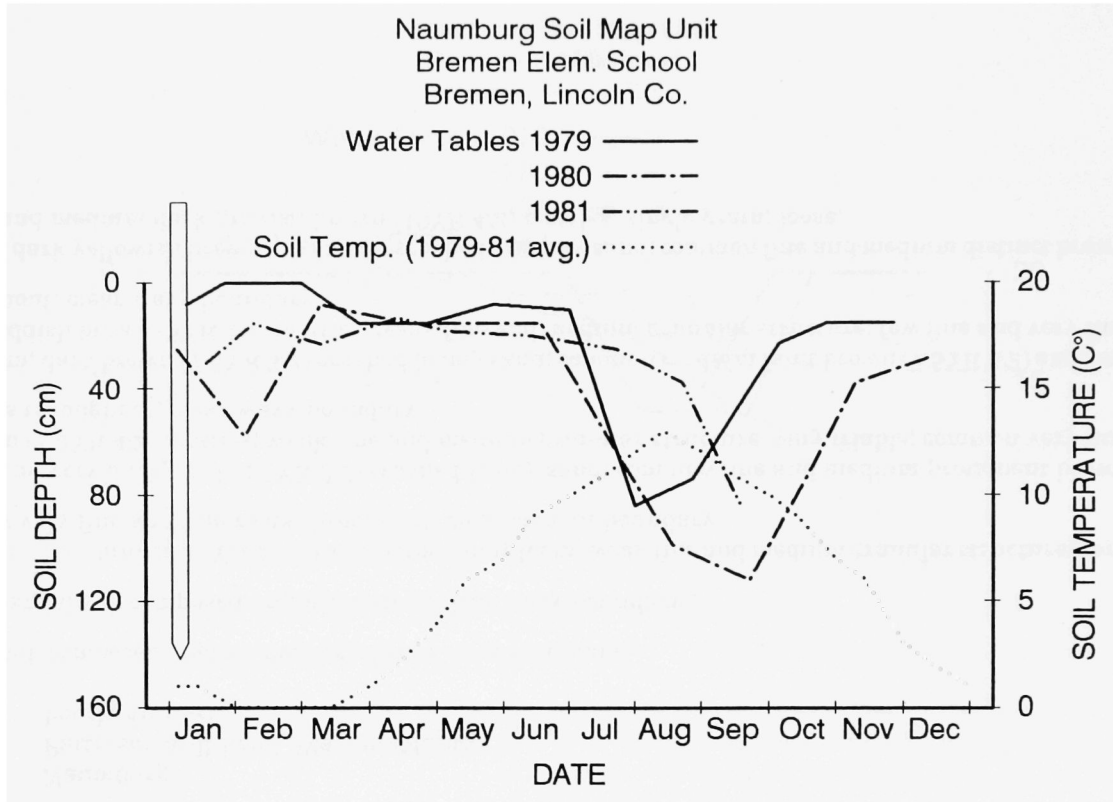
Bhs1—28 to 38 cm; dark reddish brown (5YR 2/2) crushed loamy sand; few medium prominent brown (7.5YR 5/2), and faint black (5YR 2/1) mottles; massive; friable; few very fine and fine roots throughout; clear wavy boundary.

Bhs2—38 to 58 cm; dark brown (7.5YR 3/2) crushed loamy sand; few medium prominent dark reddish brown (5YR 3/4), and fine strong brown (7.5YR 4/6) mottles; massive; friable; clear wavy boundary.

Bs—58 to 86 cm; dark brown (10YR 3/3) crushed sand; few medium distinct dark brown (7.5YR 3/2) mottles; massive; friable; clear wavy boundary.

C1—86 to 114 cm; very dark grayish brown (10YR 3/2) crushed sand; single grain; loose; gradual smooth boundary.

C2—114 to 150 cm; dark grayish brown (2.5Y 4/2) crushed sand; single grain; loose.



Soil Map Unit: Naumburg
Location: Patterson Mill Road, Warren, Maine
Drainage: Poorly drained

Oi—2 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

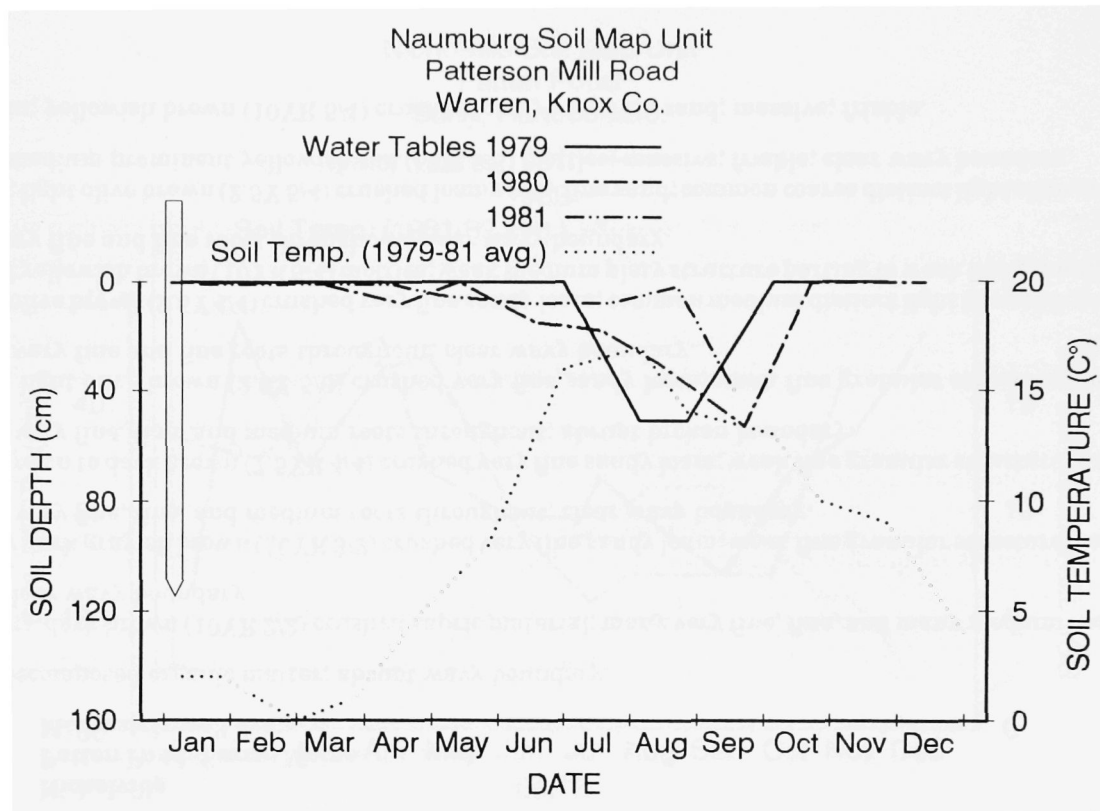
Oe—0 to 5 cm; partially decomposed organic matter; clear wavy boundary.

A—5 to 20 cm; very dark brown (10YR 2/2) crushed fine sandy loam; weak fine and medium granular structure; very friable; many very fine and fine roots throughout; clear smooth boundary.

Bhs1—20 to 25 cm; very dusky red (2.5YR 2/2) crushed loamy sand; common fine and medium prominent brown to dark brown (7.5YR 4/2) mottles; weak fine and medium granular structure; very friable; common very fine and fine roots throughout; clear wavy boundary.

Bhs2—25 to 61 cm; dark brown (7.5YR 3/2) crushed loamy sand; common medium faint brown (7.5YR 4/2) and fine prominent reddish brown (5YR 4/4) mottles; weak fine and medium granular structure; few fine and very fine roots throughout; clear wavy boundary.

C—61 to 100 cm; dark yellowish brown (10YR 4/4) crushed gravelly sand; common fine and medium distinct brown (7.5YR 5/4), and medium dark grayish brown (10YR 4/2) mottles; single grain; loose.



Soil Map Unit: Nicholville
Location: Patten Pond, Surry, Maine
Drainage: Moderately well drained

Oi—2 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 5 cm; very dark brown (10YR 2/2) crushed sapric material; many very fine, fine, and many medium roots throughout; clear wavy boundary.

A—5 to 8 cm; very dark grayish brown (10YR 3/2) crushed very fine sandy loam; weak fine granular structure; very friable; many very fine, fine, and medium roots throughout; clear wavy boundary.

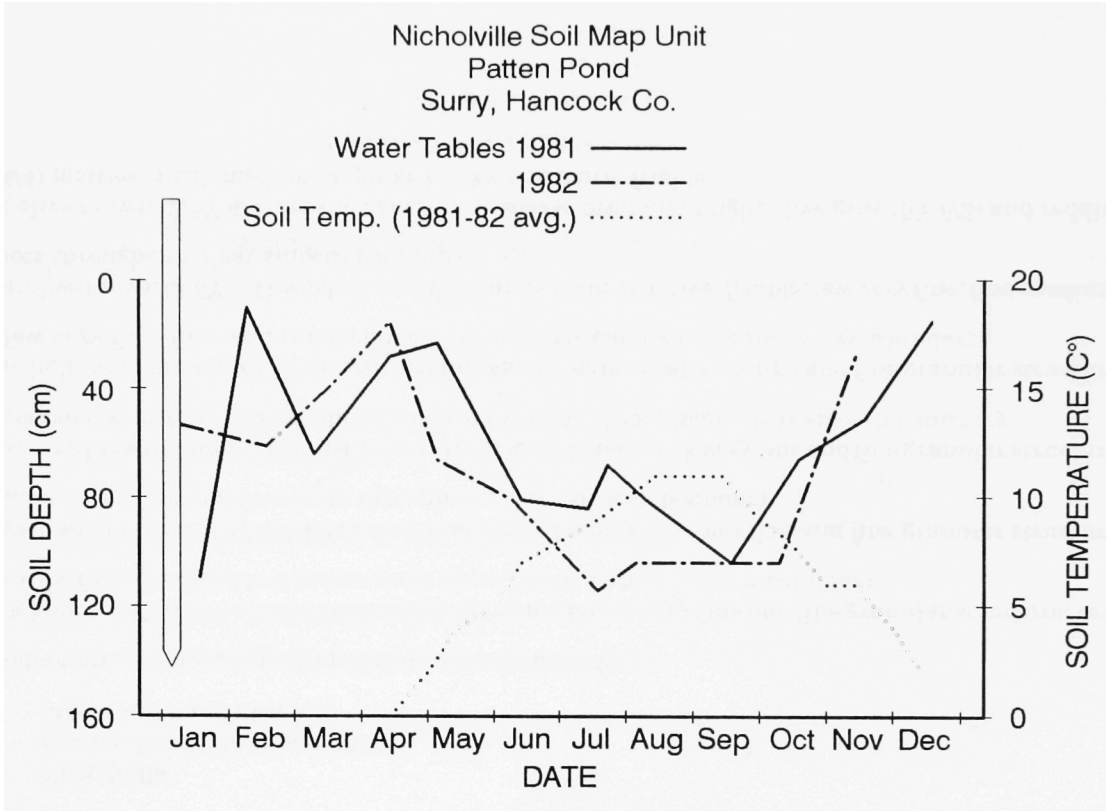
Bh—8 to 15 cm; brown to dark brown (7.5YR 4/4) crushed very fine sandy loam; weak fine granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt broken boundary.

Bs—15 to 53 cm; light olive brown (2.5Y 5/6) crushed very fine sandy loam; weak fine granular structure; very friable; many very fine and fine roots throughout; clear wavy boundary.

BC—53 to 74 cm; olive brown (2.5Y 4/4) crushed very fine sandy loam; common medium distinct light brownish gray (2.5Y 6/2), and yellowish brown (10YR 5/4) mottles; weak medium platy structure parting to weak fine granular; friable; few very fine and fine roots throughout; clear wavy boundary.

C1—74 to 127 cm; light olive brown (2.5Y 5/4) crushed loamy very fine sand; common coarse distinct light olive gray (5Y 6/2), and medium prominent yellowish red (5YR 5/8) mottles; massive; friable; clear wavy boundary.

C2—127 to 152 cm; yellowish brown (10YR 5/4) crushed loamy very fine sand; massive; friable.



Soil Map Unit: Nicholville
Location: Lincoln Road, Dresden, Maine
Drainage: Moderately well drained

Oi—2 to 0 cm; undecomposed organic matter; abrupt smooth boundary.

A—0 to 2 cm; dark brown (10YR 3/3) crushed fine sandy loam; moderate very fine and fine granular structure; very friable; many very fine, fine, and few coarse roots throughout; abrupt smooth boundary.

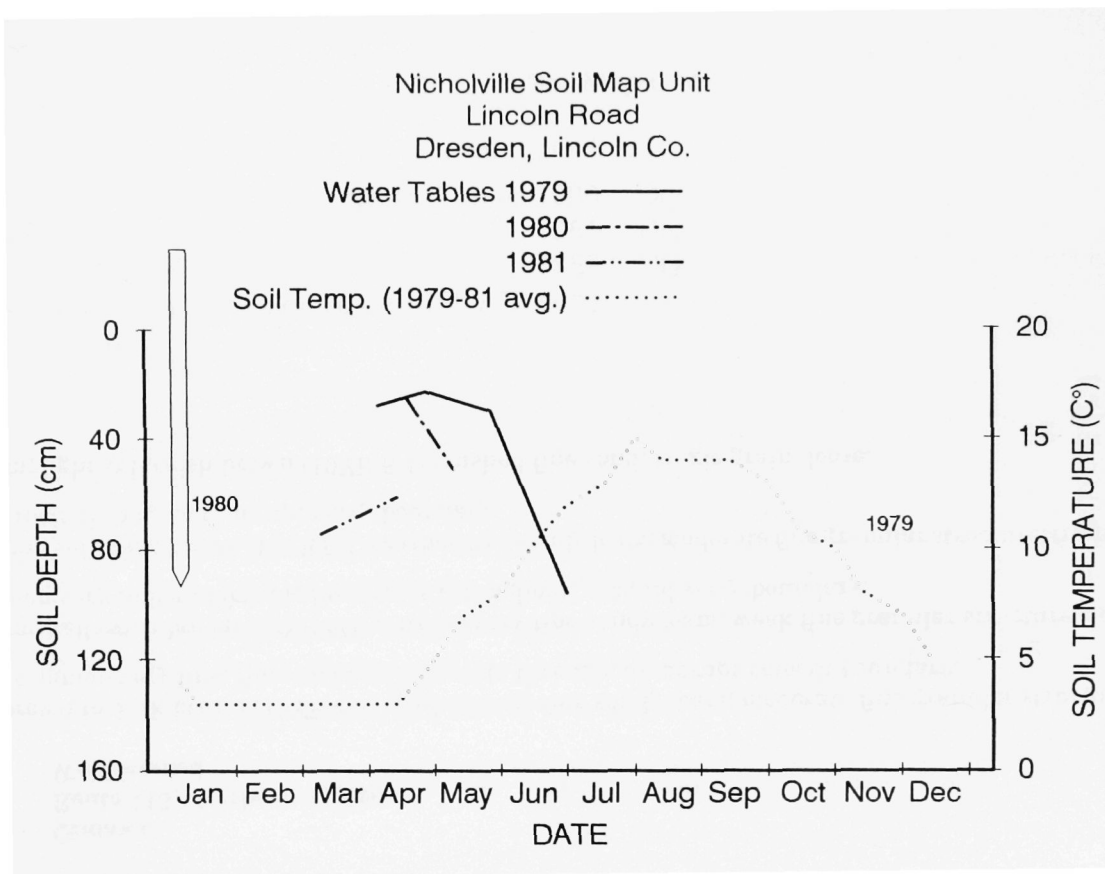
Ap—2 to 13 cm; yellowish brown (10YR 5/4) crushed fine sandy loam; weak very fine and fine granular structure; very friable; many very fine and fine roots throughout; clear smooth boundary.

Bs—13 to 30 cm; strong brown (7.5YR 5/6) crushed very fine sandy loam; weak very fine and fine granular structure; very friable; common very fine, fine, medium, and coarse roots throughout; clear smooth boundary.

BC1—30 to 43 cm; light olive brown (2.5Y 5/4) crushed fine sandy loam; weak very fine and fine granular structure; very friable; few very fine, fine, and common medium roots throughout; gradual wavy boundary.

BC2—43 to 89 cm; olive brown (2.5Y 4/4) crushed very fine sandy loam; massive; friable; few very fine, fine, medium, and coarse roots throughout; clear smooth boundary.

C—89 to 152 cm; olive brown (2.5Y 4/4) crushed silt; many coarse prominent light olive gray (5Y 6/2) and reddish brown (5YR 4/4) mottles; weak medium angular blocky structure; friable.



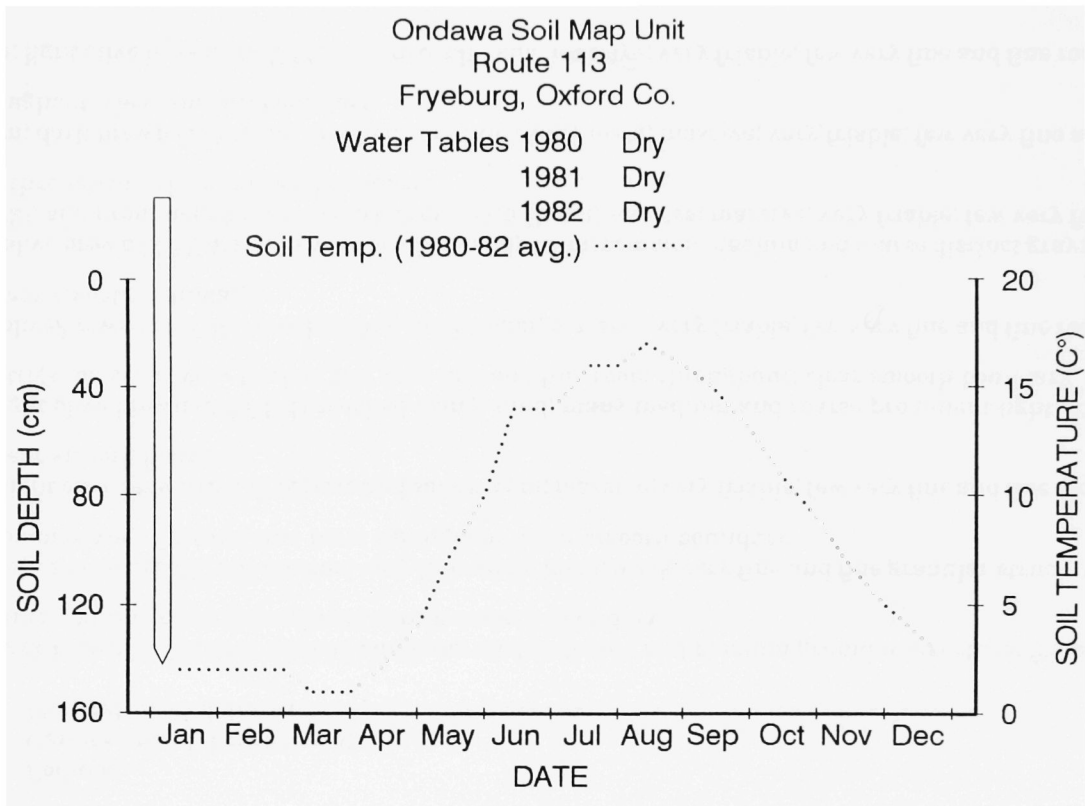
Soil Map Unit: Ondawa
Location: Route 113, Fryeburg, Maine
Drainage: Well drained

Ap-0 to 23 cm; brown to dark brown (10YR 4/3) crushed very fine sandy loam; moderate fine granular structure; very friable; common very fine, fine, and medium roots throughout; abrupt smooth boundary.

Bw1—23 to 89 cm; yellowish brown (10YR 5/4) crushed very fine sandy loam; weak fine granular structure; very friable; common very fine and few medium roots throughout; gradual wavy boundary.

Bw2—89 to 107 cm; yellowish brown (10YR 5/4) crushed fine sandy loam; moderate fine granular structure; friable; few medium roots throughout; abrupt wavy boundary.

C—107 to 152 cm; light yellowish brown (10YR 6/4) crushed fine sand; single grain; loose.



Soil Map Unit: Podunk
Location: Cannery Road, Fryeburg, Maine
Drainage: Moderately well drained

Ap—0 to 30 cm; dark brown (10YR 3/3) crushed silt loam; moderate fine and medium granular structure; friable; common very fine and fine roots throughout; abrupt smooth boundary.

Bw—30 to 48 cm; olive brown (2.5Y 4/4) crushed very fine sandy loam; weak very fine and fine granular structure; very friable; common very fine and fine roots throughout; clear smooth boundary.

BC—48 to 61 cm; light olive brown (2.5Y 5/4) crushed sandy loam; massive; very friable; few very fine and fine roots throughout; clear smooth boundary.

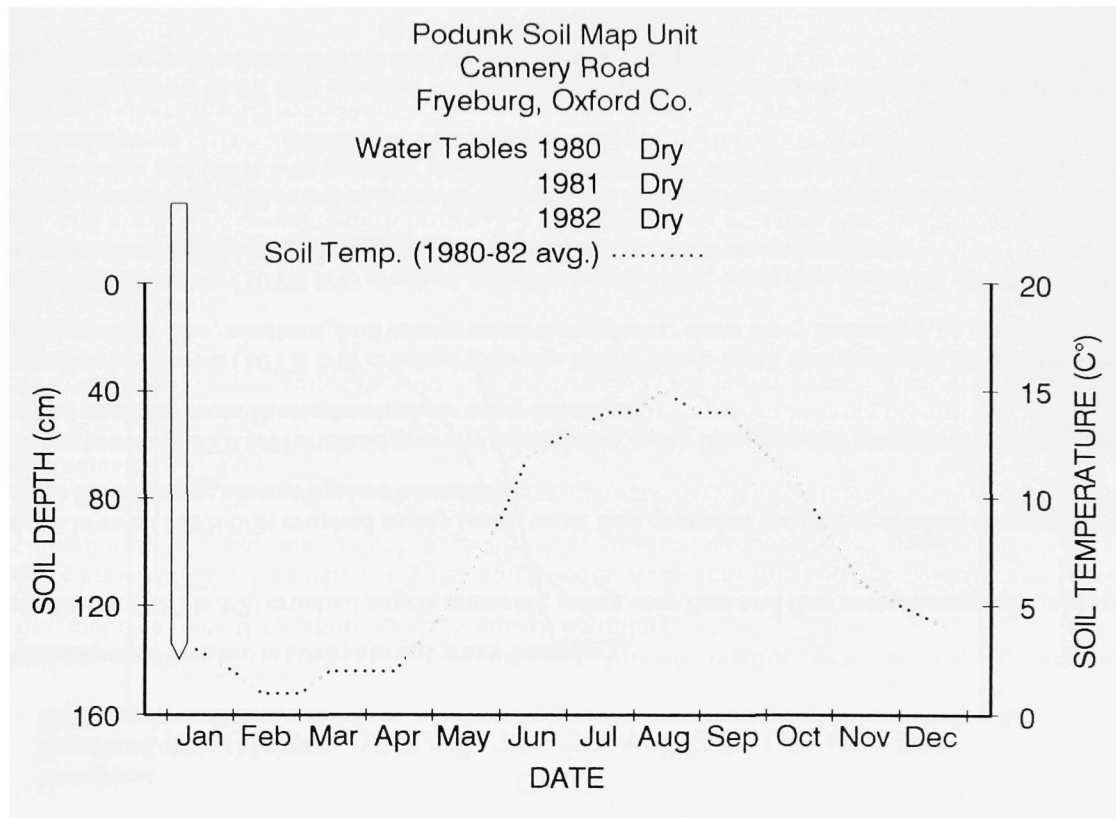
C—61 to 71 cm; light olive brown (2.5Y 5/4) crushed loamy sand; many medium and coarse prominent light gray (10YR 7/2) mottles; massive; very friable; few very fine and fine roots throughout; clear smooth boundary.

Ab—71 to 89 cm; olive brown (2.5Y 4/4) crushed fine sandy loam; massive; very friable; few very fine and fine roots throughout; clear smooth boundary.

C'—89 to 109 cm; olive brown (2.5Y 4/4) crushed very fine sandy loam; common medium and coarse distinct grayish brown (2.5Y 5/2), and prominent brown to dark brown (7.5YR 4/4) mottles; massive; very friable; few very fine and fine roots throughout; clear smooth boundary.

A'b—109 to 122 cm; dark brown (10YR 3/3) crushed very fine sandy loam; massive; very friable; few very fine and fine roots throughout; clear smooth boundary.

C"—122 to 160 cm; light olive brown (2.5Y 5/4) crushed silt loam; massive; very friable; few very fine and fine roots throughout.



Soil Map Unit: Sheepscot
Location: Bog Road, Alna, Maine
Drainage: Moderately well drained

Oi—1 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 2 cm; dark brown (7.5YR 3/2) crushed sapric material; many very fine and fine roots throughout; abrupt wavy boundary.

E—2 to 5 cm; grayish brown (10YR 5/2) crushed sandy loam; weak fine granular structure; friable; common very fine and fine roots throughout; abrupt broken boundary.

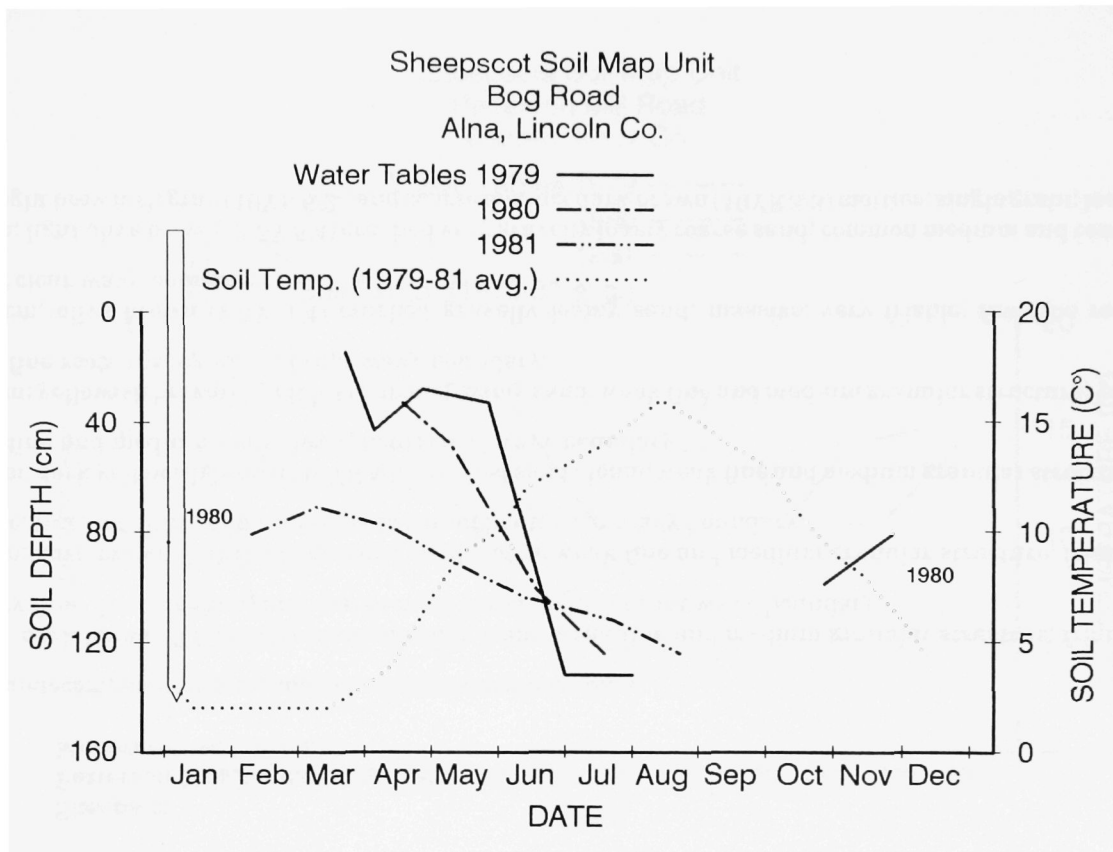
Bs1—5 to 20 cm; strong brown (7.5YR 5/6) crushed gravelly sandy loam; weak fine granular structure; friable; many very fine, fine, and medium roots throughout; clear wavy boundary.

Bs2—20 to 30 cm; yellowish brown (10YR 5/6) crushed gravelly loamy sand; weak fine granular structure; very friable; common very fine, fine, medium, and coarse roots throughout; clear wavy boundary.

Bs3—30 to 66 cm; yellowish brown (10YR 5/4) crushed gravelly loamy sand; weak fine granular structure; very friable; few very fine, fine, medium, and coarse roots throughout; gradual wavy boundary.

BC—66 to 74 cm; olive brown (2.5Y 4/3) crushed gravelly loamy sand; common fine faint grayish brown (2.5Y 5/2), and prominent yellowish red (5YR 5/6) mottles; single grain; loose; few very fine and fine roots throughout; gradual wavy boundary.

C—74 to 100 inches; olive brown (2.5Y 4/3) crushed very gravelly coarse sand; common fine faint grayish brown (2.5Y 5/2), and prominent yellowish red (5YR 5/6) mottles; single grain; loose.



Soil Map Unit: Sheepscot
Location: Patterson Mill Road, Warren, Maine
Drainage: Moderately well drained

Oi—2 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Ap—0 to 15 cm; dark brown (7.5YR 3/2) crushed sandy loam; weak fine and medium granular structure; friable; common very fine, fine, medium, and coarse roots throughout; abrupt wavy boundary.

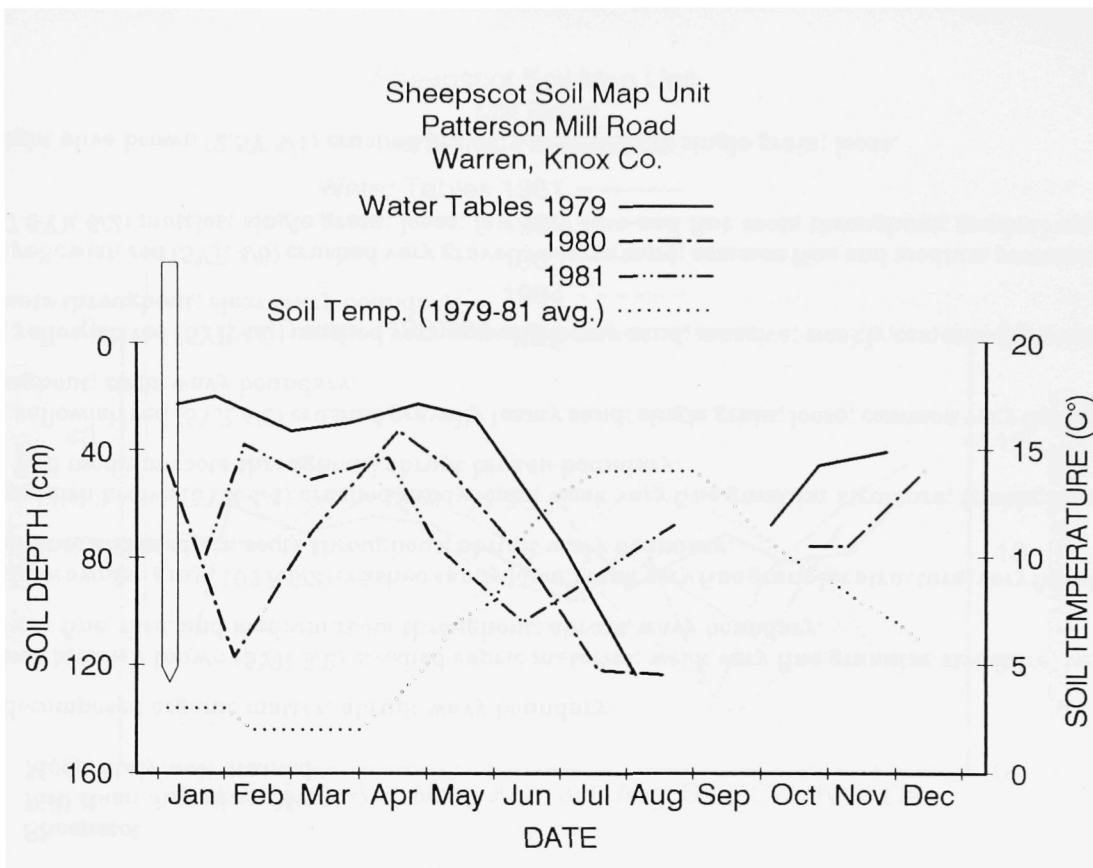
Bh—15 to 23 cm; dark brown (10YR 3/3) crushed sandy loam; weak fine and medium granular structure; friable; few very fine, fine, medium, and coarse roots throughout; clear wavy boundary.

Bs1—23 to 33 cm; dark yellowish brown (10YR 4/6) crushed sandy loam; weak fine and medium granular structure; friable; few fine and medium roots throughout; clear wavy boundary.

Bs2—33 to 41 cm; yellowish brown (10YR 5/4) crushed loamy sand; weak fine and medium granular structure; very friable; few fine roots throughout; abrupt wavy boundary.

BC—41 to 51 cm; olive brown (2.5Y 4/4) crushed gravelly loamy sand; massive; very friable; few fine roots throughout; clear wavy boundary.

C—51 to 100 cm; light olive brown (2.5Y 5/4) crushed very gravelly loamy coarse sand; common medium and coarse prominent light brownish gray (10YR 6/2), and coarse distinct dark brown (10YR 3/3) mottles; single grain; loose.



Soil Map Unit: **Sheepscot**
Location: **Mill Road, Lamoine, Maine**
Drainage: **Moderately well drained**

Oi—2 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 10 cm; dark reddish brown (5YR 3/2) crushed sapric material; weak very fine granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt wavy boundary.

E—10 to 20 cm; light brownish gray (10YR 6/2) crushed sandy loam; weak very fine granular structure; very friable; many very fine, fine, and medium roots throughout; abrupt wavy boundary.

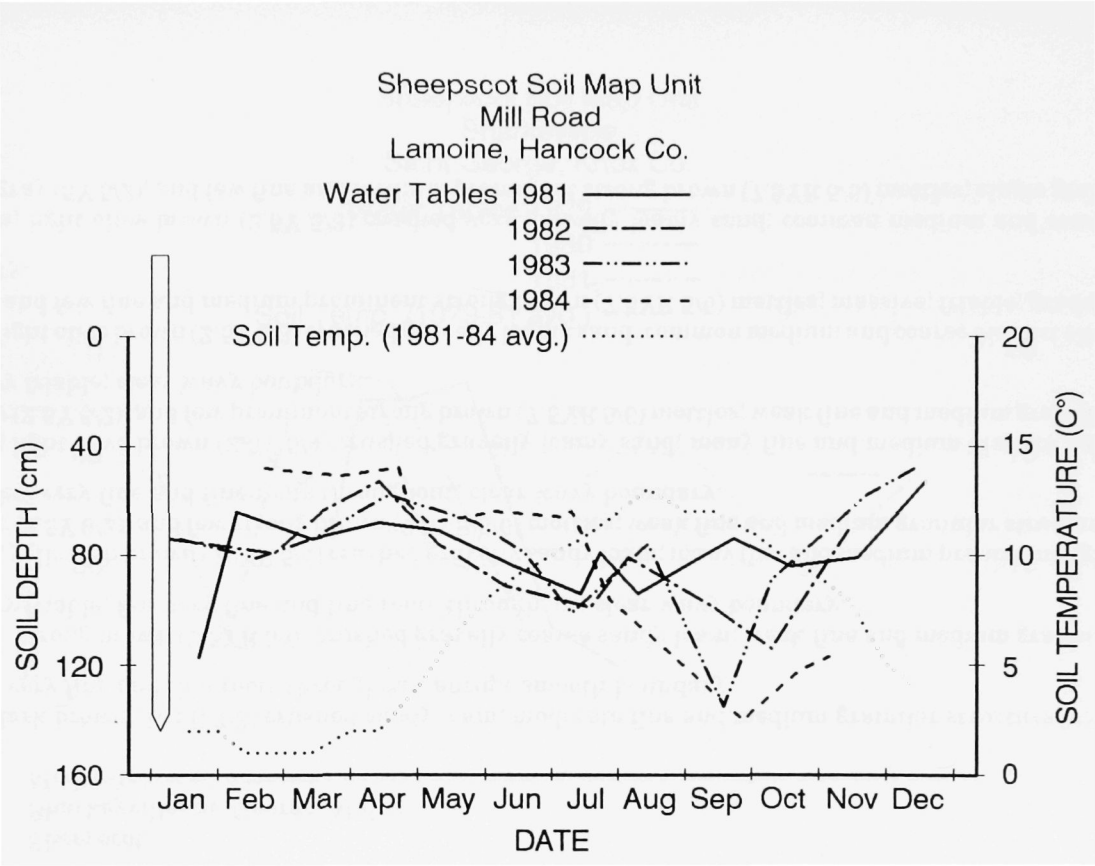
Bh—20 to 23 cm; reddish brown (5YR 4/4) crushed sandy loam; weak very fine granular structure; friable; many very fine, fine, and medium roots throughout; abrupt broken boundary.

Bs1—23 to 41 cm; yellowish red (5YR 4/6) crushed gravelly loamy sand; single grain; loose; common very fine and fine roots throughout; clear wavy boundary.

Bs2—41 to 51 cm; yellowish red (5YR 4/6) crushed very gravelly loamy sand; massive; weakly cemented; few very fine and fine roots throughout; clear wavy boundary.

Bs3—51 to 84 cm; yellowish red (5YR 4/6) crushed very gravelly coarse sand; common fine and medium prominent pinkish gray (7.5YR 6/2) mottles; single grain; loose; few very fine and fine roots throughout; gradual wavy boundary.

C—84 to 100 cm light olive brown (2.5Y 5/4) crushed gravelly coarse sand; single grain; loose.



Soil Map Unit: Sheepscot
Location: Sharkeyville, St. George, Maine
Drainage: Moderately well drained

Ap—0 to 25 cm; dark brown (10YR 3/3) crushed sandy loam; moderate fine and medium granular structure; very friable; many very fine and fine roots throughout; abrupt smooth boundary.

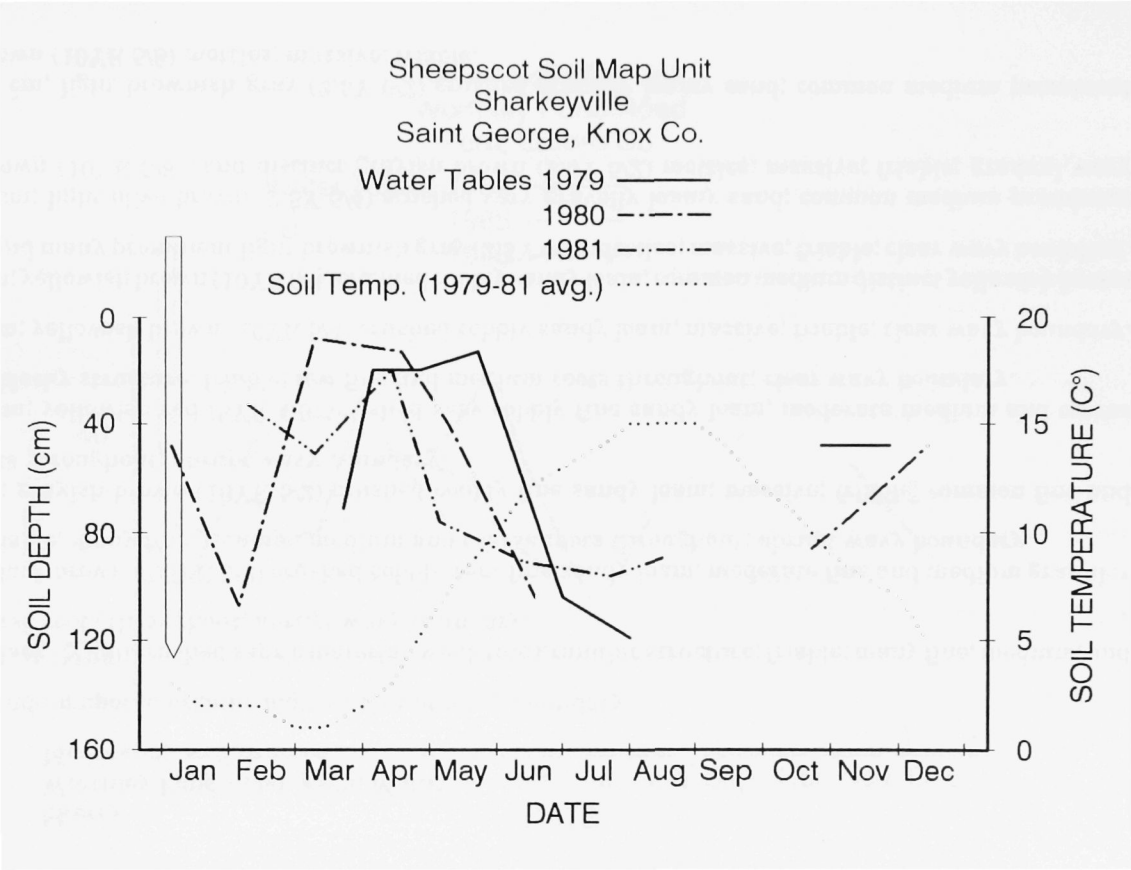
Bs1—25 to 41 cm; strong brown (7.5YR 5/6) crushed gravelly coarse sandy loam; weak fine and medium granular structure; very friable; few very fine and fine roots throughout; clear wavy boundary.

Bs2—41 to 58 cm; yellowish brown (10YR 5/4) crushed gravelly sandy loam; many fine and medium prominent light brownish gray (2.5Y 6/2), and few strong brown (7.5YR 5/6) mottles; weak fine and medium granular structure; very friable; few very fine and fine roots throughout; clear wavy boundary.

BC—58 to 76 cm; light olive brown (2.5Y 5/4) crushed gravelly loamy sand; many fine and medium distinct light brownish gray (2.5Y 6/2), and few prominent strong brown (7.5YR 5/6) mottles; weak fine and medium granular structure; very friable; clear wavy boundary.

C1—76 to 89 cm; light olive brown (2.5Y 5/3) crushed gravelly loamy sand; common medium and coarse distinct olive gray (5Y 5/2), and few fine and medium prominent strong brown (7.5YR 5/6) mottles; massive; friable; gradual wavy boundary.

C2—89 to 100 cm; light olive brown (2.5Y 5/3) crushed very gravelly loamy sand; common medium and coarse distinct olive gray (5Y 5/2), and few fine and medium prominent strong brown (7.5YR 5/6) mottles; single grain; loose.



Soil Map Unit: Skerry
Location: Worthley Pond Road, Peru, Maine
Drainage: Moderately well drained

Oi—2 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 2 cm; black (N 2/0) crushed sapric material; weak fine granular structure; friable; many fine, medium, and common coarse roots throughout; abrupt wavy boundary.

A—2 to 13 cm; dark brown (7.5YR 3/2) crushed cobbly very fine sandy loam; moderate fine and medium granular structure; friable; many fine, common medium and coarse roots throughout; abrupt wavy boundary.

E—13 to 20 cm; grayish brown (10YR 5/2) crushed cobbly fine sandy loam; massive; friable; common fine and medium roots throughout; abrupt wavy boundary.

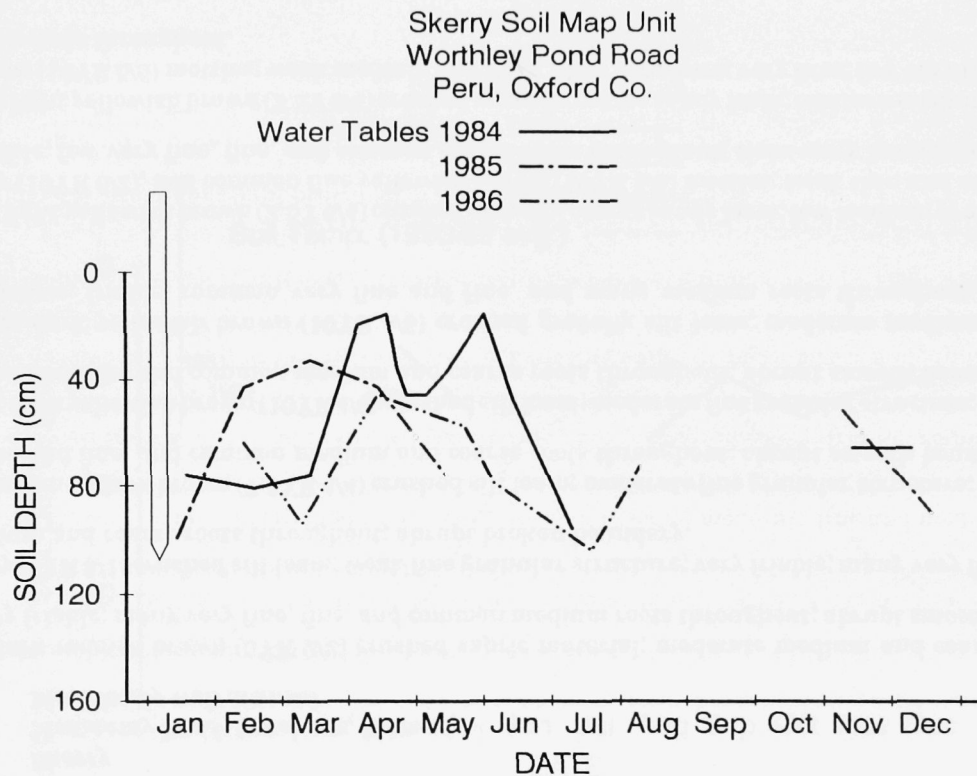
Bs1—20 to 38 cm; yellowish red (5YR 4/6) crushed very cobbly fine sandy loam; moderate medium and coarse subangular blocky structure; friable; few fine and medium roots throughout; clear wavy boundary.

Bs2—38 to 64 cm; yellowish brown (10YR 5/4) crushed cobbly sandy loam; massive; friable; clear wavy boundary.

Bs3—64 to 71 cm; yellowish brown (10YR 5/4) crushed cobbly sandy loam; common medium distinct yellowish brown (10YR 5/8), and many prominent light brownish gray (2.5Y 6/2) mottles; massive; friable; clear wavy boundary.

BC—71 to 107 cm; light olive brown (2.5Y 5/4) crushed very gravelly loamy sand; common medium prominent yellowish brown (10YR 5/8), and distinct grayish brown (2.5Y 5/2) mottles; massive; friable; gradual wavy boundary.

Cd—107 to 115 cm; light brownish gray (2.5Y 6/2) crushed gravelly loamy sand; common medium prominent yellowish brown (10YR 5/8) mottles; massive; friable.



Soil Map Unit: Skerry
Location: Monotomy Road, Fryeburg, Maine
Drainage: Moderately well drained

Oa—0 to 5 cm; dark reddish brown (5YR 2/2) crushed sapric material; moderate medium and coarse granular structure; very friable; many very fine, fine, and common medium roots throughout; abrupt smooth boundary.

E—5 to 6 cm; gray (5YR 5/1) crushed silt loam; weak fine granular structure; very friable; many very fine and fine, common medium and coarse roots throughout; abrupt broken boundary.

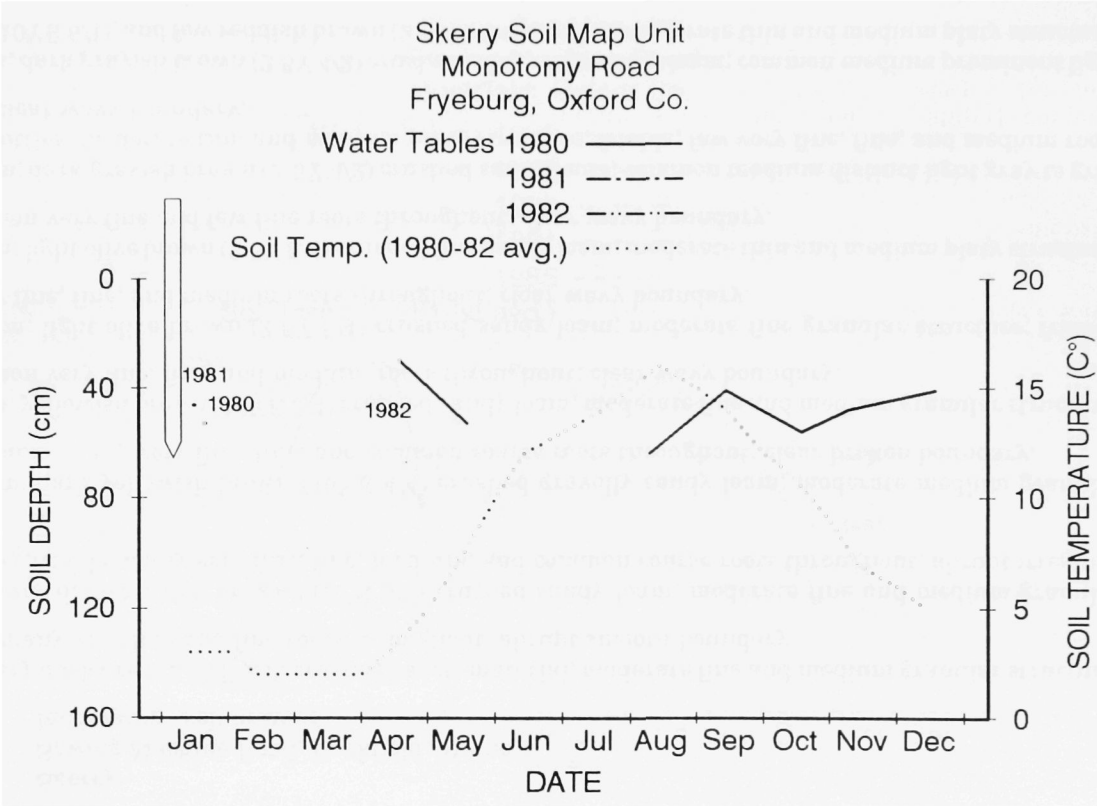
Bh—6 to 10 cm; brown to dark brown (7.5YR 4/4) crushed silt loam; moderate fine granular structure; very friable; many very fine and fine, and common medium and coarse roots throughout; abrupt smooth boundary.

Bs1—10 to 19 cm; dark yellowish brown (10YR 4/6) crushed silt loam; moderate fine granular structure; very friable; many very fine and fine, and common medium and coarse roots throughout; abrupt smooth boundary.

Bs2—19 to 44 cm; dark yellowish brown (10YR 4/6) crushed gravelly silt loam; moderate medium and coarse granular structure; friable; common very fine and fine, and many medium roots throughout; clear wavy boundary.

BC—44 to 67 cm; light yellowish brown (2.5Y 6/4) crushed gravelly coarse sandy loam; few medium prominent light brownish gray (10YR 6/2), and common fine yellowish brown (10YR 5/6) mottles; weak thin and medium platy structure; friable; few very fine, fine, and common coarse roots throughout; clear wavy boundary.

Cd—67 to 100 cm; light yellowish brown (2.5Y 6/4) crushed gravelly coarse sandy loam; common medium prominent yellowish brown (10YR 5/6) mottles; weak medium and thick platy structure; very firm; few very fine, fine, and common coarse roots throughout.



Soil Map Unit: Skerry
Location: Sewing Machine Road, Buckfield, Maine
Drainage: Moderately well drained

Oa—0 to 4 cm; very dusky red (2.5YR 2/2) crushed sapric material; moderate fine and medium granular structure; very friable; many very fine and fine roots throughout; abrupt smooth boundary.

A—4 to 16 cm; very dark grayish brown (10YR 3/2) crushed sandy loam; moderate fine and medium granular structure; very friable; many very fine, fine, medium, and common coarse roots throughout; abrupt irregular boundary.

Bs1—16 to 21 cm; dark yellowish brown (10YR 4/4) crushed gravelly sandy loam; moderate medium granular structure; friable; many very fine, fine, and common coarse roots throughout; clear broken boundary.

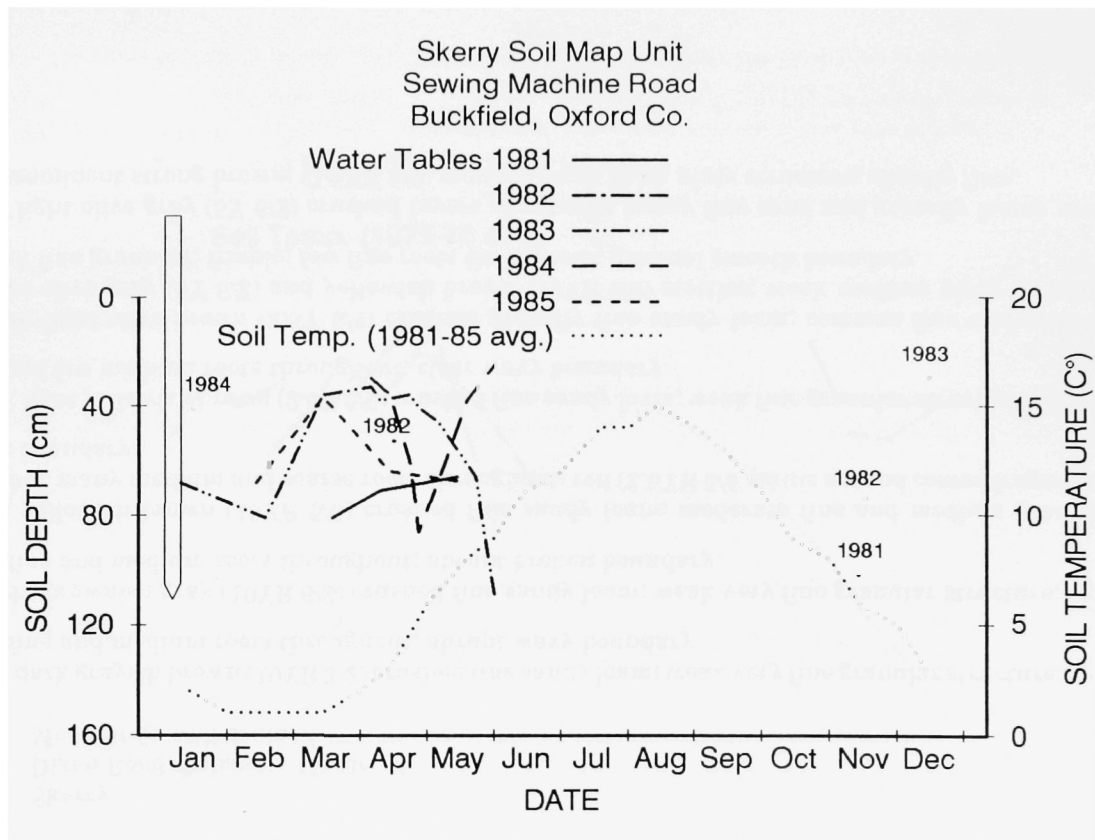
Bs2—21 to 32 cm; yellowish brown (10YR 5/4) crushed sandy loam; moderate fine and medium granular structure; friable; common very fine, fine, and medium roots throughout; clear wavy boundary.

BC1—32 to 41 cm; light olive brown (2.5Y 5/4) crushed sandy loam; moderate fine granular structure; friable; common very fine, fine, and medium roots throughout; clear wavy boundary.

BC2—41 to 52 cm; light olive brown (2.5Y 5/4) crushed fine sandy loam; moderate thin and medium platy structure; friable; common very fine and few fine roots throughout; clear wavy boundary.

BC3—52 to 78 cm; dark grayish brown (2.5Y 4/2) crushed sandy loam; common medium distinct light gray to gray (10YR 6/1) mottles; moderate thin and medium platy structure; friable; few very fine, fine, and medium roots throughout; clear wavy boundary.

Cd—78 to 100 cm; dark grayish brown (2.5Y 4/2) crushed cobbly fine sandy loam; common medium prominent light gray to gray (10YR 6/1), and few reddish brown (2.5YR 4/4) mottles; moderate thin and medium platy structure; very firm.



Soil Map Unit: Skerry
Location: Dixon Road, Lebanon, Maine
Drainage: Moderately well drained

A—0 to 8 cm; very dark grayish brown (10YR 3/2) crushed fine sandy loam; weak very fine granular structure; very friable; many fine and medium roots throughout; abrupt wavy boundary.

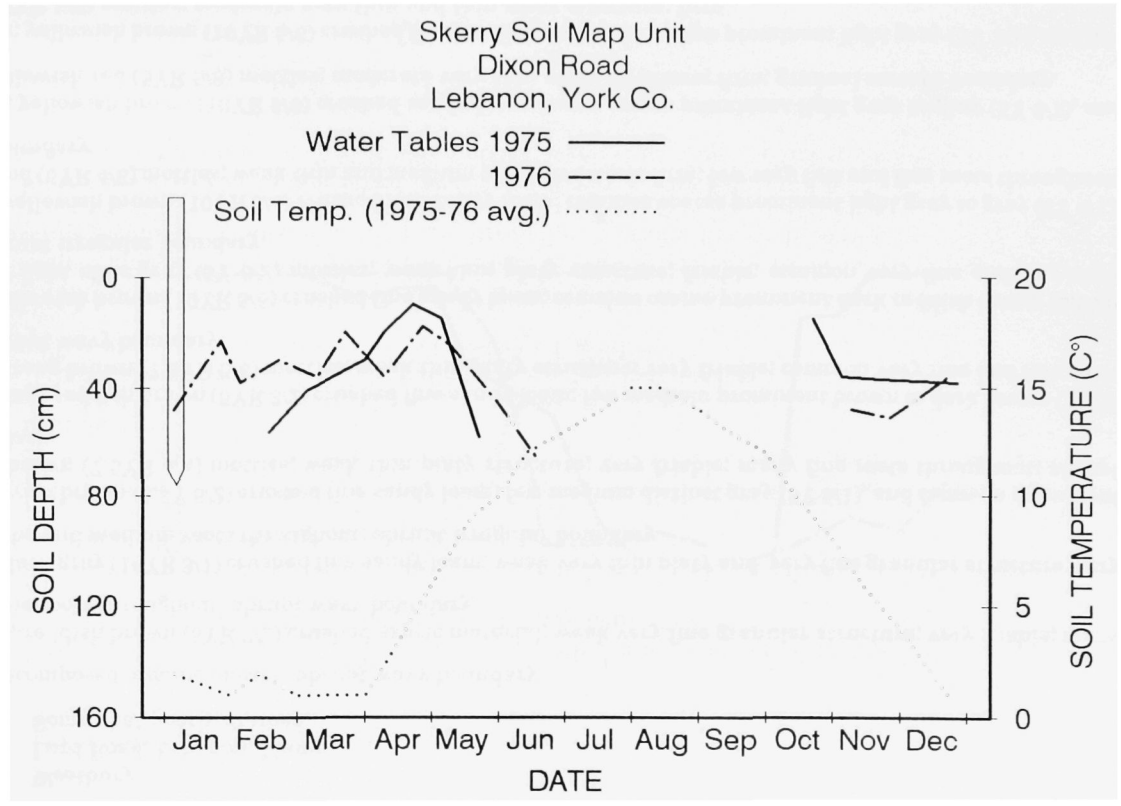
E—8 to 13 cm; light brownish gray (10YR 6/2) crushed fine sandy loam; weak very fine granular structure; very friable; many fine and medium roots throughout; abrupt broken boundary.

Bs—13 to 23 cm; yellowish brown (10YR 5/6) crushed fine sandy loam; moderate fine and medium granular structure; friable; many medium and coarse roots throughout; red (2.5YR 5/6) stains around coarse fragments; abrupt broken boundary.

BC1—23 to 48 cm; light yellowish brown (2.5Y 5/6) crushed fine sandy loam; weak fine granular structure; friable, common fine and few medium roots throughout; clear wavy boundary.

BC2—48 to 76 cm; light olive brown (2.5Y 5/4) crushed gravelly fine sandy loam; common fine and medium prominent light olive gray (5Y 6/2) and yellowish brown (10YR 5/8) mottles; weak medium platy structure parting to weak fine granular; friable, few fine roots throughout; gradual smooth boundary.

C—76 to 100 cm; light olive gray (5Y 6/2) crushed layers of gravelly loamy fine sand and gravelly loamy sand, common fine prominent strong brown; (7.5YR 5/6) mottles; weak thick platy structure; slightly firm.



Soil Map Unit: Westbury
Location: Lord Road, Lebanon, Maine
Drainage: Somewhat poorly drained

Oi—1 to 0 cm; undecomposed organic matter; abrupt wavy boundary.

Oa—0 to 2 cm; dark reddish brown (5YR 3/2) crushed sapric material; weak very fine granular structure; very friable; many very fine and fine roots throughout; abrupt wavy boundary.

A—2 to 8 cm; very dark gray (10YR 3/1) crushed fine sandy loam; weak very thin platy and very fine granular structure; very friable; many fine and medium roots throughout; abrupt irregular boundary.

Eg—8 to 13 cm; grayish brown (2.5Y 5/2) crushed fine sandy loam; few medium distinct gray (5Y 5/1), and common prominent brown to dark brown (7.5YR 4/4) mottles; weak thin platy structure; very friable; many fine roots throughout; abrupt irregular boundary.

Bhs—13 to 25 cm; dark reddish brown (5YR 3/2) crushed fine sandy loam; few medium prominent brown to dark brown (10YR 4/3), and fine strong brown (7.5YR 5/6) mottles; weak thin platy structure; very friable; common very fine and fine roots throughout; abrupt wavy boundary.

Bs—25 to 61 cm; yellowish brown (10YR 5/6) crushed fine sandy loam; common coarse prominent dark reddish brown (2.5YR 3/4), and many light olive gray (5Y 6/2) mottles; weak thin platy structure; friable; common very fine and fine roots throughout; abrupt irregular boundary.

Cd1—61 to 94 cm; yellowish brown (10YR 5/4) crushed fine sandy loam; common coarse prominent light gray to gray (5Y 6/1), and yellowish red (5YR 4/6) mottles; weak thin and medium platy structure; firm; few very fine and fine roots throughout; clear smooth boundary.

Cd2—94 to 127 cm; yellowish brown (10YR 5/6) crushed sandy loam; many coarse prominent light gray to gray (5Y 6/1), and few medium yellowish red (5YR 5/8) mottles; moderate very thin platy structure; firm; gradual smooth boundary.

Cd3—127 to 152 cm; yellowish brown (10YR 5/6) crushed fine sandy loam; many coarse prominent light gray (5Y 7/1), and few yellowish red (5YR 5/8) mottles; moderate very thin and thin platy structure; firm.

